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The Johns Hopkins Magazine

- THE SILENT STAGE

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The Johns Hopkins Magazine

◀ In the laboratory, the study of the interactions of organic substances often leads to important medical knowledge. This study, for example, may help science to determine the influence of genes on cellular synthesis and structure. Photo by William C. Hamilton

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The Cover:

Andromache, widow of Hector, cries out in sorrow in a unique production of *The Trojan Women*. The Euripidean tragedy, presented by students of Gallaudet College for the deaf, was translated into sign language by Leonard Siger, a Hopkins alumnus. Photograph by Robert Phillips

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Letters TO THE EDITOR.....

To the Editor:

If it is true that the Class of '60 are apathetic, confused, rootless, and without inspiration, then certainly they seem no different from the Educated Man you chose so incomprehensibly to write a "Discourse on Dragons," whatever that was intended to mean. I did not believe that any of us who were young adults during the past twenty years could have written a retrospective essay without recalling the incredible tens of millions of people who were killed, maimed, starved, and tortured in the Great War. Can an Educated Man write about his present animal comforts without mentioning the hurricane winds of racial conflict building up in our own country and in Africa? Does your writer have traditions to hand on to his children? If so, he has concealed them handsomely in his article.

I have no doubts that Dr. Hamilton is a fine gentleman, but I believe he has written the most damning indictment of our generation (I am 41) that I have yet read. I write not from a "sour grapes" position because I, too, enjoy the many physical comforts of middle-class, professional life. But I hope to Heaven our new graduates will think about more significant matters than Suburbia, Necessary Trivia, and the rest of the pap that Dr. Hamilton discourses about.

I expected better from the Hopkins magazine and, indeed, found it in the "last lectures" of the three professors.

Morris Goldman, sc.d. '53

Atlanta, Ga.

To the Editor:

I have just finished reading your May–June issue, and it is the first time in a long life that I have written "a letter to the editor." I think that this issue of the magazine is a most outstanding one, especially the article by Dr. Hamilton.

Milton L. Halle

Baltimore, Md.

To the Editor:

I was dismayed and disturbed at the reply to your letter to the Class of 1960 requesting the opinions of its members of what they had obtained from their four years at Hopkins. Can it be that Hopkins is graduating boys so lacking in purpose and direction and courage to meet life's problems as seems to be indicated in Edmund G. Shower, Jr.'s article? In the four years have the minds of these young men not been awakened to the fact that they are privileged to be living in the most exciting and challenging century in the world's history? I have two grandsons. I have wished that one of them at least might go to Hopkins. Now I have grave doubts as to this; I certainly wouldn't want him to come out of college with the viewpoint that Mr. Shower describes.

H. C. Gillespie, b.a. '02

Needham, Mass.

To the Editor:

After reading Mr. Shower's complete article I believe that *Newsweek* did not do him justice. Also I find that as a whole I agree with him or at least can see his point of view. I expect he will be a leader in his community, maybe nationally.

There are, however, a few of his statements I would like to discuss. Not only his generation, but every generation for ages, has been told they are inheriting more problems than any other generation. Society has a way of creating more problems than it solves.

As for the well-informed citizen, far too many of even our so-called "educated" people support their knowledge on too narrow a base.

The worry about survival in this age of H-bombs and icbm's is universal. As I see it, there is less danger to animal (physical) man than to human (spiritual) man. If we continue to concentrate on the military aspect of the cold war (brinkmanship), survival is just a matter of time. Destruction might be physical, but more likely it will be spiritual (man enslaved by military scientists—either American or Communist). There are already those (military scientists) in the free West (to say nothing about the Communist world) who only consider man as a mathematical equation.

The most important asset man has is the spiritual ability to reason, love, and all the other strictly human traits. I hope we never forget that.

As long as the cold war is mainly an arms race, Russia and China can keep up and even call most of the signals, but we should be able to call the signals in a truly spiritual or ideological war. Here is where the natural idealism of youth can be helpful—in spite of the disillusions and frustrations we have passed on to them.

We hate to admit it, but we are in a rut—a rut with materialism on one side and militarism on the other. Humanity has a chance if, with their natural acceptance of fresh ideas, youth can jar us (the older generation) out of this rut. We don't budge very easily, but isn't it worth a try?

H. B. Johansen

Askov, Minn.

To the Editor:

I had the opportunity of glancing over The Johns Hopkins Magazine recently. It was the May–June 1960 issue dealing with the thoughts of a graduating senior and the reassurances of a chemist who had graduated in the Class of 1940. I thought it an excellent

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issue—one that should be read by all Johns Hopkins men and by many others, as well.

T. KEITH GLENNAN
Administrator
National Aeronautics and Space Administration
Washington, D. C.

TO THE EDITOR:

As the wife of an alumnus of Johns Hopkins University I read the Magazine. The current issue, May–June, is, I think, one of the finest I've seen in a long time.

But, and here I hesitate, but I shouldn't, to tell you that there is a fly in the ointment. Note the double-page picture on pages 8 and 9 of three lads, and a fourth partly shown; draw a five-inch circle in the middle, one inch from the top, and what is the center of interest? Insidious as it is, one naturally wonders if this is a paid ad. At any rate it will cause the makers of National Bohemian beer to pat their purses at this publicity, and especially if it is gratis. Might not this product and, in fact, all drinking in general be partly responsible for the apathy, unrest, and boredom of many of this modern generation?

AGNES CADY CHITWOOD
Morgantown, W. Va.

TO THE EDITOR:

I was extremely impressed by the May–June issue of The Johns Hopkins Magazine. Its content was pertinent, well-written, and effectively illustrated.

PAUL R. MILLER
Committee for Educational Grants and Scholarships
General Motors Corporation
Detroit, Mich.

TO THE EDITOR:

I have heard a great deal of comment about your most recent magazine and would very much appreciate having a copy. I read something of it in *Newsweek*, and it is the type of thing which we would appreciate having for further dissemination.

D. D. DARLAND
National Education Association
Washington, D. C.

TO THE EDITOR:

I have enjoyed reading your May–June issue so much that I would like to have a copy for my files. The faculty "last lectures" seemed to me especially well-written—with verve and with insight.

E. MORTON MILLER, DEAN
College of Arts and Sciences
University of Miami
Coral Gables, Fla.

TO THE EDITOR:

The Johns Hopkins Magazine's May–June issue on "This ? Generation" is remarkably fine. Congratulations.

JACOB M. MOSES, B.A. '93
Baltimore, Md.

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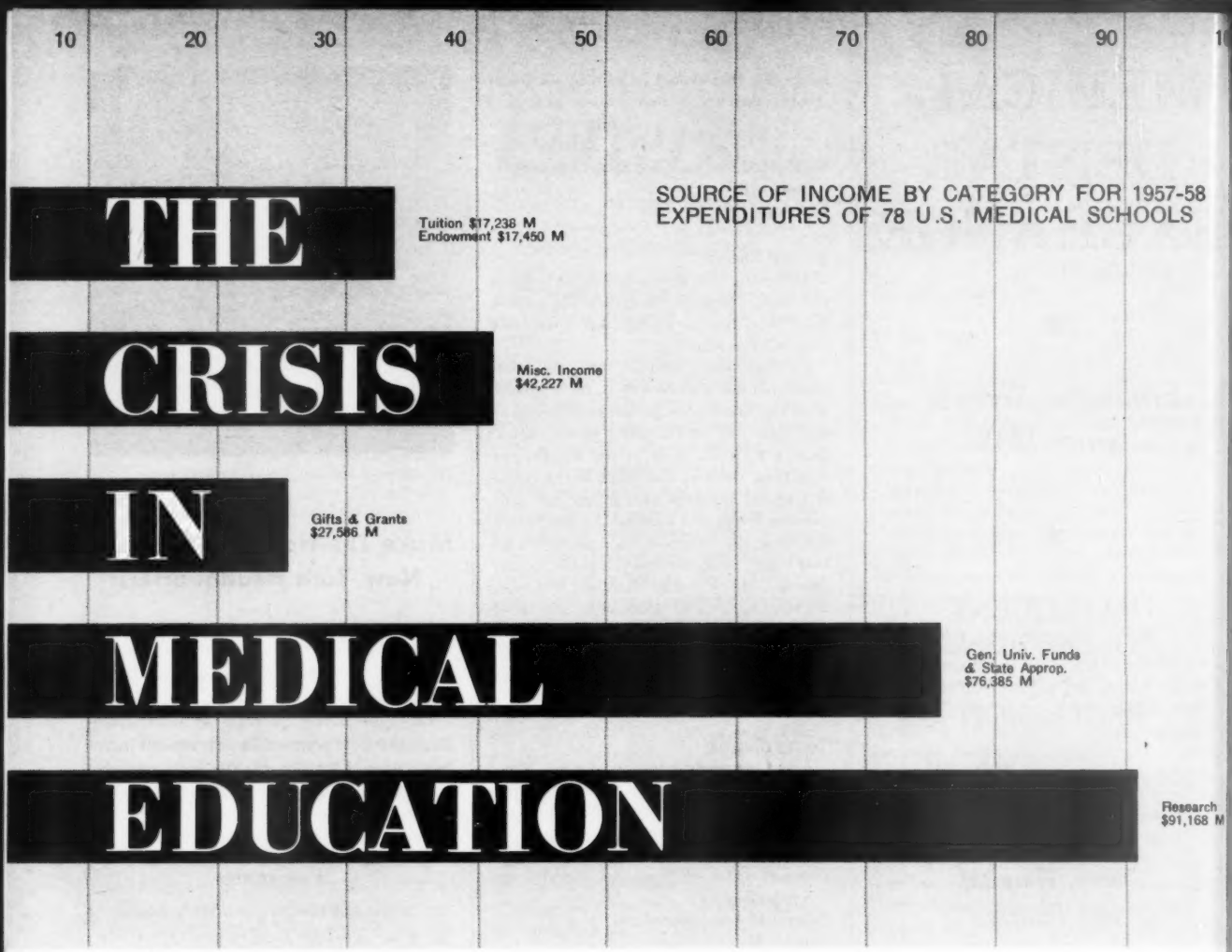
THE CRISIS IN MEDICAL EDUCATION



America needs more doctors, more top quality medical students, more medical schools, more new ideas about curriculum. And if we don't act at once, the nation's health will be endangered.

NOT SINCE 1910, when the penetrating Flexner Report revealed that half the nation's medical schools were mere diploma mills, has American medical education faced so formidable a challenge as confronts it today. And now, as then, the problems are both of quality and quantity.

So complex and inter-related are these problems that up to now we have devoted most of our effort to recognizing them and evaluating them and have done very little to solve them. In the past few years, more and more attention has been focused on medical education and research. The alarm has been sounded by the medical profession itself, and it begins to echo across the country.

Three committees of consultants, appointed respectively by the Secretary of Health, Education and Welfare, the U. S. Surgeon General, and the U. S. Congress, have in the past three years reported on problems of medical research and education.* Although each of these differed in detail, they all agreed on one thing: Unless immediate action is taken by private and public agencies, the number and quality of America's physicians will decline to a point where the nation's health is endangered.

This conclusion is based on the key assumption that the ratio of physicians to population must not fall below today's ratio of 141 physicians (132 M.D.'s and 9 doctors of osteopathy) for each 100,000 Americans. For the past thirty years, that ratio has scarcely changed, but only because it has included more and more foreign doctors. In 1959, 8,400 foreign physicians from ninety-

*"The Advancement of Medical Research and Education," Stanhope Bayne-Jones for the Secretary of Health, Education and Welfare, 1958. "Physicians for a Growing America," Frank Bane for the U. S. Surgeon General, 1959. "Federal Support of Medical Research," Boisfeuillet Jones for the U. S. Senate, 1960.

one countries served in 846 U. S. hospitals. (In 1950, there were 458 foreign doctors in the U. S.) This is more than all the M.D.'s graduated from America's eighty-five medical schools last year. Seventeen per cent of the doctors licensed for medical practice in 1958 were educated outside the U. S. Half the residents and interns of New York City are foreign doctors, and 25 per cent of all our residents and interns are aliens.

Foreign physicians constitute a grave problem in themselves, for many of them are ill-trained and unqualified to practice in our hospitals. But hospital administrators are so desperate for staff that many of them feel a poorly trained foreign doctor is better than no doctor at all. In 1957–58, the newly-formed Education Council for Foreign Medical Graduates tested almost 6,000 foreign physicians in this country. Only about half of them qualified for practice. The problem has become so serious that the American Medical Association and the American Hospital Association officials have threatened to disapprove the training programs of hospitals that use unqualified physicians after September, 1960.

EVEN making use of qualified foreign physicians, however, we shall have difficulty maintaining the physician-population ratio over the next fifteen years. By 1975, the population of the U. S. is expected to reach 235 million. To keep up with this tremendous growth, America's medical schools will have to increase their output of physicians by 50 per cent—graduating 11,000 students annually instead of the present 7,400. As the Bane Report points out, even if we continue at our present and planned growth rate, we won't make it. By 1975, we'll be graduating about 9,000 M.D.'s, and if we add 750 foreign doctors annually, we will still have only 318,400 physicians—far short of the 330,000 needed to maintain our doctor-population ratio.

Nor is the problem solved simply by maintaining this ratio. It is only a statistic and there is nothing magical about it. It does not reveal, for example, that of those 141 physicians for each 100,000 citizens, fifty are not in private practice, but are in hospitals, teaching, research, or some other service. There is nothing in the statistic to indicate that half of those 141 doctors are specialists. (In 1931, only one-sixth of our physicians considered themselves specialists.)

Some argue that the physician-population ratio need not be rigidly maintained because the doctor of today is more efficient, better equipped, more able to use his time wisely and well. Truly, today's doctors are more efficient. They now see most of their patients in their offices or in hospitals; home visits have declined from 44 per cent in 1930 to 10 per cent today. A simple but significant example is in maternity cases: In 1935, half our babies were born at home; now 96 per cent are born in hospitals. And a doctor sees twice as many patients today as he did thirty years ago.

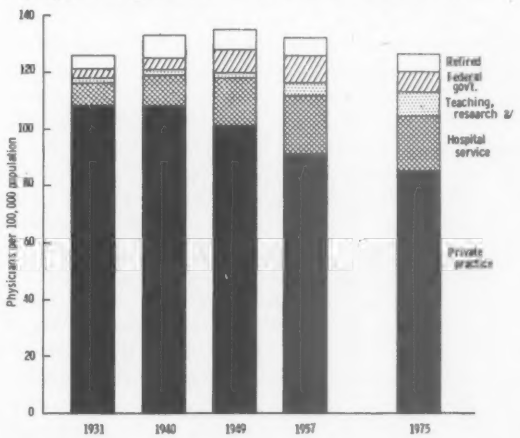
On the other hand, it must be pointed out that there is more for the physician to do. By 1975, some 22 million of our citizens will be over sixty-five years of age, and 75 million will be under fifteen. This is an increase of about 20 million young people and 6 million old people. And it is these two segments of our population that require the most medical attention.

Furthermore, Americans are getting more medical care than ever before. Thirty years ago, the average person saw a doctor only two or three times a year. Now he visits his physician five times a year. City people see physicians more often than rural people do, and the continuing urbanization of this country can be expected to add to the pressures for more medical care. In 1931, the average physician saw fifty patients a week; today he sees more than a hundred—which indicates increased demand as well as increased efficiency. Medical insurance was virtually unheard of thirty years ago, but today, three-fourths of the population has hospitalization insurance, and Congress has just enacted compromise legislation that will provide coverage for needy older people.

The doctor is certainly more efficient than he ever was—but he is a great deal busier, too.

Perhaps the greatest inadequacy of the physician-population ratio statistic is that it says nothing of the personal relationship between doctor and patient. The patient is largely unconcerned with the statistical problems of medicine. He may shake his head in sympathy over the doctor's work load, but he still wants more of his doctor's time and attention. His plaint is

Physicians per 100,000 persons, by type of practice: 1931–57 and 1975 [1]



[1] At present rate of graduation.
[2] Includes also non-Federal public health, industrial and insurance medicine, and other nonprivate practice.

that the physician is too busy, too impersonal, too uninterested in his patients' problems, too unwilling to make house calls.

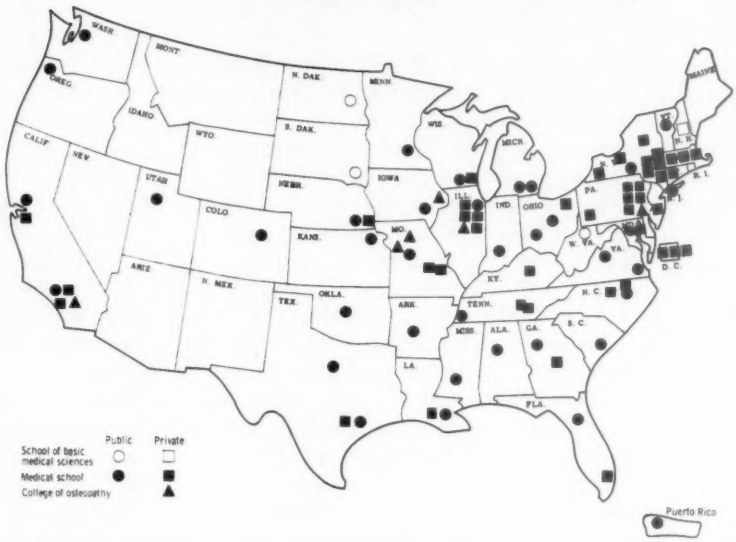
THE imminent shortage of physicians becomes more significant and more sobering when we turn to the source of our doctors—the supply of medical students. The number of students applying to the nation's medical schools has dropped steadily for the past three years. In 1957, 15,791 students applied to medical schools. In 1958, the number of applicants fell to 15,170. And last year, 14,951 students applied. (Although Johns Hopkins has experienced a proportionate decrease, it has 11.7 applicants for each acceptance, while the national average is two applicants for each acceptance.) All the while, the number of college graduates has been steadily increasing. Some medical school deans even now report increasing difficulty in filling first year classes with acceptable students. It is in seeking to explain this drop in the number of applicants to medical schools that we touch on some of the vital problems of medical education.

There are several very practical reasons why our young people are less attracted to medicine than they used to be. For years, medical schools have been highly selective, and the impression has finally registered that only the best students need apply (and the doors would close even before all of these could be admitted). Less dedicated students, or those who, though good, may not be the *best* students, are perhaps convinced that there is no use in applying to medical schools.

Even the best student may hesitate. Ahead of him lies a very rugged course, indeed. If accepted, he faces four years of medical school after college. When he receives his M.D., he begins his postgraduate medical education of internship and residency, which may last from two to eight years, and averages 3.5 years.

Medical education is expensive, and the student can expect little financial aid from sources outside his family. The median cost to the student of four years of medical school is about $11,642, of which more than 80 per cent is paid by the student and his family. (Forty per cent of all medical students come from families with incomes over $10,000, although this group comprises only 8 per cent of American families.) About

Location of schools of medicine and osteopathy: 1959



one-fourth of U. S. medical students receive scholarships—but these provide only about 5 per cent of his total expense. (Eighty-five per cent of Johns Hopkins medical students receive scholarships which pay about 15 per cent of total expense.) The other 95 per cent he gets from a variety of sources, and it is not uncommon for a medical student to be $5,000 in debt by the time he graduates; a third of them owe at least $2,000. Marriage adds to the burden, especially when there are children. Two-thirds of our medical students are married and half of these have at least one child, by graduation.

There is no relief during the internship and residency years. On the contrary, this period is often bitterly referred to as the "slave labor" era, for the intern averages less than $2,400 a year, and the resident rarely exceeds $3,000 a year. Many serve in our best teaching hospitals for less than $1,000 a year.

In sharp contrast, careers in other sciences promise ample rewards—not only on completion of education, but during the school years. The federal government, which awards no fellowships to medical students, provides aid to nearly every other field of education. This year, four federal agencies will award some 10,000 pre-doctoral fellowships in the physical, life, and social sciences, and in psychology, engineering, the arts, the humanities, and education. These fellowships give the graduate student free choice of where to study, provide him with a stipend often exceeding $2,000 with $500 for each dependent and a travel allowance, and they pay his tuition (and often an additional sum to the institution). In addition, the PH.D. candidates in the sciences are able to work part-time as laboratory or research assistants. Part-time work is nearly impossible for medical students and is forbidden by some schools. And the time required to obtain a PH.D. is usually considerably less than the educational period of a medical doctor.

Not all the reasons for the decline of the popularity of a medical career in the eyes of the students are material ones. Once the physician was a hero-figure for the young. They envisioned him as the dedicated, self-sacrificing healer who brought solace and health to mankind. There is reason to believe that this image no longer persists to the the degree that it once did. Youth now thinks of the physician as the specialist who has a plush waiting room, a formidable receptionist, a long black Cadillac, and an expensive house. They know him as one who treats by phone rather than makes house calls. In his place as the symbolic hero has appeared a new and romantic figure, clutching a rocket in one hand and a satellite in the other. The attraction of the physical sciences has grown large in this dawn of the space age.

WITH the drop in the number of applicants to medical schools comes an alarming decline in quality.

In 1950, 40 per cent of first year medical students were "A" students. In 1956, only 16 per cent were "A" students. First year students averaging "B" had jumped from 43 per cent in 1950 to 71 per cent in 1956.

During the past four years, more medical students have been failing. The rate of withdrawal from medical school for academic reasons has increased while withdrawal for other reasons has barely changed. (Some 10 per cent of the nation's medical students withdraw for all reasons; the attrition rate at Johns Hopkins is 2 per cent.) A study appearing in the April 1959 issue of the *Journal of Medical Education* reports that scores for all first-time applicants for each of the years 1952–57 clearly show a decline in quantitative aptitude and scientific skills as measured by Medical College Admissions Tests. (Preliminary studies of this year's and last year's applicants suggest that this trend may be reversing itself. Johns Hopkins reports a general increase in MCAT scores.)

Quality is probably related to residence restrictions in state schools and to total school expenditures. The average MCAT scores at schools with few out-of-state students were lower than those with more out-of-state students. And studies indicate that schools with low budget expenditures are generally those with the lower MCAT score averages.

ONE of the biggest obstacles to producing the additional well-educated doctors needed by 1975 to maintain the physician-population ratio is money. The Bane Report warns that if we are to have enough physicians by 1975, we must expand our existing educational facilities and build twenty to twenty-four new medical schools. The Jones Report estimates that the entire cost of expanding and modernizing existing schools and building the necessary new ones will be about $993 million over a ten year period—about $100 million a year.

As usual, the solution has its own built-in problems. Some deans are eager to expand their medical schools; others are reluctant for several reasons, not the least of which is their fear that the increase in size will result in a decrease in quality. Even if we had the money to expand what we have and build a couple of dozen new schools, where do we get the operating funds?

In 1958, the nation's eighty-five medical schools spent about $176 million on basic operations—an average of about 2.1 million for each school. This is more than three times the amount spent for basic operations in 1948 and more than six times the amount spent in 1941. (Johns Hopkins spent about 4 million on basic operations in 1958–59.) And the people who raise money for medical schools will sadly relate that it becomes ever harder to get the money for basic operations—or anything else, except research.

Just paying the salaries of the additional faculty for expanded and new medical schools would come to millions of dollars. And it might be easier to find the money for salaries than to find the teachers to earn it. Dean Thomas Turner of the Johns Hopkins Medical School believes that "the real bottleneck in medical education today is in the lack of qualified teachers and scientists to staff the basic science departments of medical schools." A report in the *Journal of Medical Education* points out that medical schools are having serious difficulty filling teaching posts for which money has already been budgeted. In 1957–58, there were 619 budgeted academic vacancies—twice as many as the year before. And almost that many medical jobs went begging last fall. Even more startling is the fact that medical schools need faculty over and above those vacant budgeted positions. Twenty medical schools reported in 1959 that they needed an average of fifty faculty members per school for which there is no money budgeted. It would cost $500,000 per school to hire these people—if they could be found.

"Financial problems in medical education are no new phenomenon," says Lee Powers, associate director of the Association for American Medical Colleges. "Inadequate financing has posed a continuing threat to the nation's medical schools. Always in the past, the schools have found solutions to meet the needs of the recurring crises."

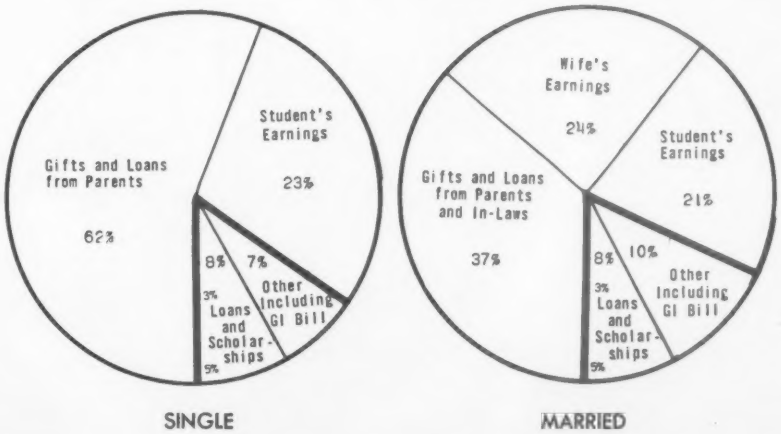
But now, more than ever before, time is a crucial element.

There is a lapse of eight to ten years between the planning of a medical school and the graduation of the first class (which then faces internship, residency, and military service). This means that even if funds were immediately available for the construction of new medical schools, they would not be turning out practicing physicians until the next decade—long after the physician-population ratio had slipped below the danger point.

THE lack of funds and the lack of time indicate that broad and immediate action is needed. This means that private sources of aid (gifts, grants, and endowments) which are steadily increasing and always a major source of income, will not be able to meet the need in time. State and local governmental aid is an alternative, and this source accounts for about 38 per cent of the operating budgets of America's medical schools—70 per cent for public and 10 per cent for private. (Johns Hopkins receives no such aid.) State and local appropriations have played an increasingly prominent role in the financing of medical schools in the past ten

Continued on page 28

How does the student pay his cost of medical education?



by MURRAY KEMPTON, B.A. '39

BENEATH ALL THE CLANGOR

An observer of the tragic martyrs of the Thirties, a student dissenter in his own youth, finds heroes in "This ? Generation"

There on that scaffolding reclines
Michael Angelo.
With no more sound than the mice make
His hand moves to and fro.
Like a long-legged fly upon the stream
His mind moves upon silence.

Yeats, *Last Poems*

THIS SUMMER past, an age ago as men live, *The Johns Hopkins Magazine* devoted an issue to the Class of 1960. Its cover bore the title, "This ? Generation." Its core was a long essay by Edmund G. Shower, Jr., of the Class of 1960, who said that his was a rootless generation. There was an accompanying report from middle age by Jefferson Hamilton, Jr., Class of 1940 (a year after my own class), who has become, by the evidence of his words, one of those gentle, modest men who do the world's work. His is either the best of choices or the best of fates, depending on your notion of causation; but I should suppose it inadequate for the vision of the young, since it is unromantic.

The young are always romantic. They are romantic rejecting or accepting, conforming or rebelling; when they raise the question mark, they are still hoisting a banner. Herbert Gold wrote, at the dawn of their now-sinking fashion, that the beat poets reminded him of an over-heated refrigerator, groaning and gasping but always proclaiming its coolness. Jack Kerouac is as romantic as Dickens—without the salvation of Dickens' decency.

My generation—or at least that minority of my generation which dominated its expression when I was younger—thought of itself as destined to die martyred for later generations, presumably this present generation first. This generation—or at least its articulate minority—conceives itself as dying victim of a general atomic war. We have had in common the note of doom, which is a romantic note; I suspect that we shall share the fate of having survived into middle age to look at other generations with other unrecognizable, because forgotten, romantic images of dying young and beautiful. Man, Yeats said, has created death; can the young, who cannot even feel it in the bones, be expected to do anything else?

I suffer even in middle age from the disease of romance; but I no longer rate it as high as I once did. Chesterton, in his life of Saint Francis of Assisi, was careful to say that Saint Francis was not a romantic poet. Saint Francis was a part of nature, being intimate with bird and wolf, while nature to the romantic poet is only the backdrop against which he sits as his own central image.

The romantic is, then, an attitude, and a self-centered one; and the young are self-centered and willful, no more when they kick than when they stand still under the halter.

THERE IS, of course, a war between the young and the old but not between extremes of chronology; it is rather a war between immediate generations, between adolescents and their parents (to whom the romantic attitude is dangerous and costly—less, perhaps, to themselves than to those they have come to love). The very old—or such of the very old as survive to have any impress upon their time—are themselves romantic and still young. (Members of the Rules Committee of our House of Representatives excepted.) All reports of Boris Pasternak's funeral noted the presence of numbers of young strangers who felt themselves kin.

The very old, when they survive, have no heroes except themselves and the dead. They are the truly fortunate young, because they are the only free young.

The last issue of *The Johns Hopkins Magazine* carries

Mr. Kempton is a columnist for the New York *Post* and author of *Part of Our Time.*

this quotation from Thomas Jefferson:

"Each generation is as independent of the one preceding, as that one was of all which had gone before."

But not more so. I should rather misinterpret Thomas Jefferson than quarrel with him. And to accept the meaning of these words on their face would be to call him a hypocrite; when Jefferson organized the University of Virginia, he was careful to protect its students by keeping Federalists off its faculty. He must also have meant that every generation is as *dependent* on the one preceding it as that one was of all which had gone before. And no more so.

The Class of 1960, if group descriptions ever have any value, seems to me peculiarly a product of my own generation, from which its parents came. It therefore reflects a society which my generation created. There are certain criticisms of that society too familiar to be echoed here. A society in which the perusal and possession of *The Status Seekers* became a requirement for status-seeking is hardly subject to anything purposeful in the way of denunciation. When Jeremiah lectures to women's clubs, the jeremiad is no longer a form of prophecy; it is only an article of merchandise.

To the extent that it was possible to sum up the thirteenth century as an Age of Faith, we might summarize the Fifties as the Age of Journalism. The mind moved, haltingly and distractedly, through noise. There was almost nothing, including our youth, that went unsurveyed, nothing that went unreported, and almost nothing that was remembered. Journalism is a delightful job but an inferior activity. Its products are conceived, not for an audience, but for customers.

Its special weakness is that, in the urge to be current, it is usually out of date. The only newspaper with any hope of being in tune with this year is next year's newspaper; today's newspaper, at its best, describes last year's events. And since the academicians have caught the bug of being current, but with more leisurely deadlines, a widely-discussed study of the national temper can easily be as much as five years out-of-date.

The Class of 1960 was peculiarly unfortunate because its members were the primary victims of the Age of Journalism, which was an age of packaging. In our society, the product is less important than the machinery of its distribution. The most typical experience of our time is the moment when you finish a glass of beer and discover that there has been absolutely no taste sensation beyond the residue of soap left from the last rinsing of the glass.

The young, as customers, do not have time to think what they themselves might like; they are only told what others of the young like. Last year's senior, as an instance, in an otherwise sensitive discussion of the attitude of his generation, mentioned "rock 'n' roll" as its symbol.

But "rock 'n' roll" is not a creation of his generation; it is something packaged and distributed by adults. If I were an entirely humorless man, I might trace for his benefit an entire socio-economically determinist history on popular music. We had the great swing bands when I was young, not because our taste was better but because labor costs were cheaper. By now distribution has become so expensive that adults must peddle to the customer an adulterated product; "rock 'n' roll" is really a pale version of the rhythm and blues of my own adolescence.

In 1934, those of us who were fortunate enough to grow up in Baltimore could sit in an amusement park the whole summer through listening to the Fletcher Henderson band, with Roy Eldridge, Chu Berry and Sidney Catlett, all three of whom together cost the management less than one of the Moonlighters. Can the young dream that our economy can afford to give them the real thing—a product of craft and feeling—and support the road manager, the booking agent, the press agent and the bus driver at the same time?

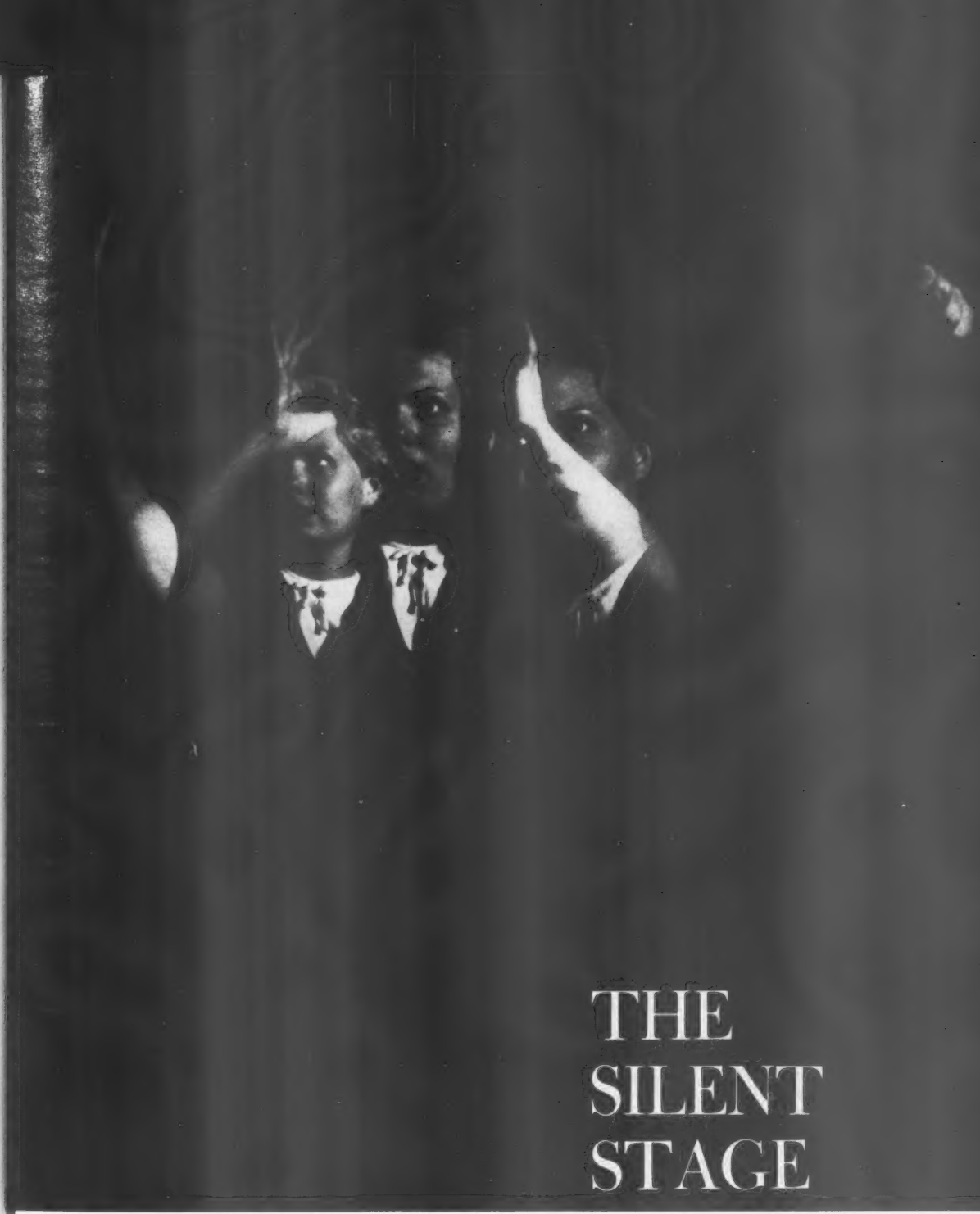
One of the most pathetic conversations in my memory was held with a girl of the new generation after we had listened to a "rock 'n' roll" record. I said how dreary and tasteless it seemed to me; she answered that I did not understand its associations to her; it made her remember a sentimental occasion. The young provide their own occasions, but their setting is a donation of the middle-aged. We tend to think of the setting as the occasion, and so, I suppose, do the young when they articulate the occasion. For the young to speak at all to the middle-aged, they must imitate the language and attitude of the middle-aged. If the setting of the young displeases us, we might be humbled a trifle by the thought that we, after all, provided it.

BUT JOURNALISM—if journalism can be widened to enfold everything from the market research poll to *The Organization Man*—in deceiving itself, has also deceived the young about the actual temper of America by describing a civilization which, at the moment it is described, may be ceasing to exist. And in that way, we journalists may have done the young the greatest disservice of all.

The time lag is inevitable for journalism. Sometimes it can go back fifty years; there still seems to be some question for the wire services that Picasso can draw if he wishes. In matters of social judgment the lag is somewhat shorter than in those of the aesthetic, but it is nonetheless a damaging one.

The classic instance of the function of the time lag was journalism's concern with the domestic menace of a pro-Soviet ideology. If that menace ever existed, it expired in 1948 with the collapse of Henry Wallace's Progressive Party. And so there came in 1950 the late Senator McCarthy, the fireman putting the axe to the

Continued on page 24



THE SILENT STAGE

A Hopkins alumnus translates classical drama into sign language

THE young lady pictured above is reciting in the sign language of the deaf a line from Euripides' *The Trojan Women* recently presented by the deaf students of Gallaudet College in Washington, D. C. The production of classical drama there began with *Oedipus the King* in 1956 when a young English teacher, Leonard Siger, PH.D. '60 (English), aroused the students' interest in Greek drama and helped make the performance of it a reality. On the next two pages, Dr. Siger discusses the drama of the deaf; and following that is a photographic excerpt from *The Trojan Women*.

By LEONARD SIGER

CLASSICAL DRAMA AND THE DEAF

Once when I was visiting the campus of the University of California at Berkeley, I saw a fine reproduction of a Greek theater in glistening marble, beautifully set against a green hillside. When I asked the caretaker what it was used for, he replied that it was hardly used for anything—except an occasional fraternity musical.

Being a person of certain strong prejudices, it would seem to me that the important thing is not the ownership of an expensive architectural facsimile of a Greek theater, but rather, a lively concern for the production of Greek drama.

When I came to Gallaudet College in 1956, as a lecturer in the humanities program I am afraid I made the mistake of showing my enthusiasm for Greek drama. Because the next thing I knew, a freshman was at my desk proposing that his class present Sophocles' *Oedipus the King* and *Antigone*—on the same bill. I said what amounted to "Out of the question," and immediately began thinking of possibilities.

Within a few months, my colleague, Robert Panara, and I had translated *Oedipus* into sign language. Dean George Detmold, our director, had cast the play and was conducting rehearsals in the old Chapel that serves as our theater. The play was presented in the spring of 1957. The audience liked what it saw, and we followed in 1958 with *Hamlet* and in 1959 with *Othello*. Last spring, we combined *Rhesus* and *The Trojan Women* by Euripides into one production called *The Fall of Troy*.

The production of classical drama in the language of the signs is not as incongruous as one might think. On the contrary, the performances by the deaf are, in some ways, closer to the original presentations of classical drama than any other modern version. I got my first real insight into the remarkable structure of choral odes in Greek tragedy, for example, when we were working on the translation of *Oedipus*. Since the imagery was not metaphorical, we could afford to translate literally, and as we proceeded, it became obvious that the signs used to translate the antistrophes ("counter-turns") followed a line of spatial movement opposite to that of the signs for the strophes ("turns"). To be sure, I don't now go around claiming to know better than the Hellenists what the action of the ancient Greek chorus looked like as the play was performed. But I do think that I now have a better sense of what it might have been like.

Because we live in an age of graceless oratory, for the most part, and of mumbling stock protagonists from Beverly Hills, we sometimes forget how important the manual gesture was in classical and Elizabethan drama. We know from illustrated handbooks of Shakespeare's day that gestures were put to good use. And today, in the Shakespearean productions of the Bristol Old Vic Drama School, a little gestural science helps to cure the disease of shouting Shakespeare.

Of course, the sign language of casual conversation is not appropriate to the stage. But sign language properly learned and properly used can be a vehicle of considerable power and beauty, better suited to the expression of emotion, in some respects, than any spoken language.

An actor, to express emotion, relies (or ought to rely) primarily on the movements and attitudes of his body. His main aim is the projection of various emotional states of the character that he is portraying, for a play is, to an audience, primarily an emotional experience. Sign language when properly used links emotion to information in a way not possible in spoken language. True, the musical effects of spoken verse are not possible in sign language. But another kind of beauty is. Many parts of the choral songs in *The Trojan Women* were rendered by dances based on abstractions and extensions of signs. The actor's whole body, with the sum total of its movements, expresses the mood of the character, while the audience at the same time understands, word by word, what is being said.

The language of signs is the first and basic means of communication for the deaf, and whatever its artificial or natural origins, it has become a fully "humanized" language, broad enough in scope to allow for the expression of the whole range of human thought and feeling. It is by no means a substitute for the spoken language, but when it is used by someone who knows what he is about, it has a beauty and artfulness of its own. No more can be said of any language.

The number of words in the language is small, perhaps only two or three thousand. This seems to be a low count when compared with the tens of thousands of words in an English dictionary. But the comparison is misleading, for it is not so much that the vocabulary of the sign language is small, as that there are by comparison with English relatively few unique or individual signs. The English language is unusually rich in synonyms which arrange themselves in a hierarchy of expressiveness. Thus to give the notion of extended size, there are in English a number of quite distinct words, some native, some borrowed, each with a different root: big, large, great, huge, massive, immense, gigantic, enormous, colossal. There is only one sign for

Leonard Siger, left, prompts an actor at the rehearsal. He reads all parts aloud during a performance. The director, Dean George Detmold, is standing, and stage manager Gilbert Eastman is in the foreground.

big, and it is made by placing the two hands in a neutral position before the body with the palms facing, as though holding an imaginary carton, then drawing the hands apart. Though there are no signs for *enormous* or *immense*, the spatial volume of the sign for *big* can be increased by extending the hands and arms farther from the body, by drawing them farther apart, by gesturing facially, and by generally increasing the muscular tension of the entire upper torso.

When a play is translated into sign language, it is reduced essentially to a system of notations. The English words are chosen (or are replaced by other words) which can be signed. When writing for the ear, the dramatist must pay careful attention to the sound of the word. But when translating for the eye, we seek words that are expressed by the deaf with signs that are graceful in formation and movement in space, and which convey the thought most beautifully and powerfully to the eye.

In an attempt to carry over the emotional impact in the poetic line of the choruses of Greek plays, a great deal of attention is paid to the signs in terms of their formation and sequence of movement in space. Sometimes this means that free paraphrasing is called for. More often than not, it will be simply a matter of sloughing the "poetic" diction of a very-late-Victorian translation. Thus in the Loeb Library edition of *The Trojan Women* the chorus says: "Oh that, when, far o'er the mid-sea sped, / Menelaus' galley is onward sailing." For this, our sign script has: "Soon Menelaus' ship will reach mid-sea." We think this an improvement over the Victorian, but what about the peerless rhythm and harmony of the Greek itself? Beside that our sign language text, like pie, is too plain. But we must remember that the words in our script are only convenient notations for signs, manual gestures, which on stage are produced by the chorus in such a way as to create exactly the sense of dreadful foreboding that is required.

Our experiences at Gallaudet with the sign language performances of classical drama have been gratifying and profitable—both to us and, we feel, to the people who saw the plays. There are today approximately 170,000 deaf persons in America (largely concentrated in metropolitan areas) who are excluded by their handicap from many activities, one of which is play-going. For this reason, Gallaudet College has thought to propose a traveling repertory company of deaf actors —Gallaudet alumni—who would bring good plays in sign language to the deaf audience. Our proposal has received encouragement and is now going forward.

Determined to punish the Greeks, Athena asks for help from Poseidon:

I need your help
to destroy the Greeks.

A Synopsis of "The Trojan Women"—

THE GODS SCHEME

WRITTEN in 415 B.C., *The Trojan Women* is Euripides' passionate expression of the horror and futility of war.

The setting of the play is a field outside the gates of Troy, at the close of the famous war of Homeric legend. The city itself is a smoldering ruin; all the Trojan men have been killed, and the women and children are about to be shipped to Greece as slaves. In the early light of dawn, they can be seen still sleeping near the tents which line the field.

Among the sleeping captives walks Poseidon, god of the sea and patron to Troy. While grieving over the fate of his beloved city, he is approached by Athena, goddess of war, who supported the Greeks in the siege of Troy. Surprisingly, Athena now asks Poseidon to help destroy the Greeks, for she has been shocked and repulsed by the barbarity and cruelty of the Greek soldiers. Poseidon agrees to help; when the Greeks have set sail for their homeland, Zeus will send rain and darkness and lightning, Poseidon will provide a great sea storm, and Athena herself will strike down the Greeks in their ships.

Over the rest of the play looms the threat of this imminent disaster, although no mortal, either Greek or Trojan, is aware of it. The misery of war is destined to strike both the victors and the vanquished.

Photographed for The Johns Hopkins Magazine by Robert Phillips

Poseidon, god of the sea, mourns the destruction of the city of Troy:

This was my city, Troy;
I built it. And now, destroyed.

Eerily, Cassandra prophesies that she and Agamemnon will be murdered:

I see my own body, cold and pale,
lying on his, and over all a
bitter cold rain falling, falling.

Andromache, now a slave to Pyrrhus, mourns the fate of the Trojan women:

We would all better be dead
than to live as we live now,
our husbands, fathers, sons all gone.

AMONG THE WOMEN THERE IS DESPAIR AND BITTERNESS

When the gods have left, Hecuba, queen mother of Troy, rises from her sleep. With lyric pathos she mourns the death of her beautiful city and of her sons—Hector the king and Paris. She curses Helen, wife of Menelaus of Sparta, for it was Helen's foolish love affair with Paris which began the disastrous war.

The other women now awaken, each in turn to express her bitterness and despair. Misery is compounded as each learns her fate. Hecuba is told by a Greek herald that she will become a slave to the hated Odysseus. Her daughter, Cassandra, whom Ajax had ignominiously raped before the altar of Athena the night before, is to be made concubine to Agamemnon. Cassandra, a sensi-

Her love for her dead husband will conflict with her loyalty to Pyrrhus:

Dear Hector, once my husband,
great in nobility and courage;
you were all my desire.

Facing an angry, cuckolded husband, Helen seeks to justify her infidelity:

Why did I betray my country?
I can fall in love like any person,
and Paris lured me to him.

tive, withdrawn girl—now seemingly insane—prophesies that she will be the cause of the death of Agamemnon. As she is being led away to the Greek ships, Cassandra pauses to deliver another prophecy: Hecuba will escape servitude, for she will die before reaching Greece.

Andromache, the widow of Hector, now comes forward with her young son, Astyanax. Grieved to learn that she is to become a slave to Pyrrhus, Andromache is comforted by Hecuba, who advises her that if she nurtures Astyanax well, some day the prince may return to rebuild Troy and restore the city to its former glory.

The last glint of hope is smothered when the Greek herald announces that, because Astyanax is of noble blood, he must be killed. For the sake of her son, Andromache suppresses her cries of bitterness until the boy has been led off to his death.

Menelaus arrives to reclaim his treacherous wife, Helen. He has resolved to have her put to death immediately, though Hecuba is certain that, in the presence of the beautiful Helen, Menelaus will change his mind. There follows a tragicomic scene in which Helen argues her case, more insolently than pleadingly, and wins the mercy of her weak-willed husband.

Thus the Trojan women, their last bit of dignity stolen from them, their hopes crushed, are denied even a measure of vengeance.

Hecuba bitterly bemoans the murder of Hector's son, her own grandchild:

What can I write on the grave?
Here lies a little boy the Greeks
killed because they feared him?

A bewildered and forsaken chorus raises a questioning prayer to Zeus:

O, Zeus, is it true that you
have forgotten my city, ruined
and broken by the flaming storm?

"THE CITY OF SORROW STANDS NO MORE"

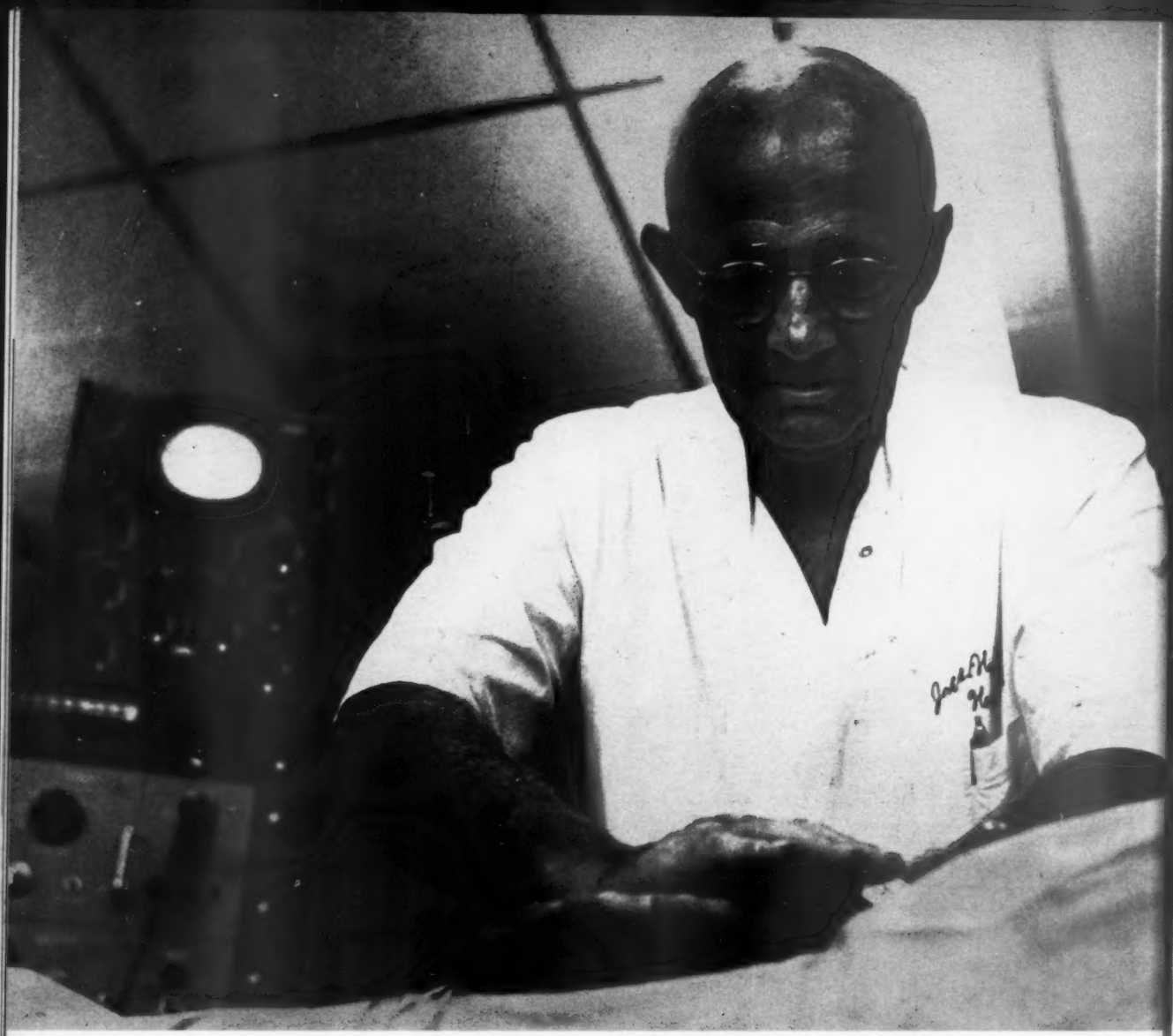
"O MIGHTY Zeus," cries the chorus of Trojan women, "Troy has been betrayed, and you have given everything to the Greeks." The crescendo of grief and bitterness rises to its height. The voices of the chorus, while anonymous and passive as in all Greek drama, nevertheless contribute greatly to the pathetic tenor of the play as they echo the grief of the protagonists. They, together with Hecuba, are the focal point of the closing scenes.

All but one of the Greek ships have departed, and of the principal characters, only Hecuba remains. The body of Astyanax is brought to her, not in a coffin, but wrapped in his father's coat. She prepares the body for burial, crying out in scorn at the Greeks for their cowardly fear of a harmless child.

With torches the Greek soldiers set fire to the remains of Troy. The last of the women are led towards the ships, and the chorus voices its final lament:

Mourn for the city ruined,
Mourn for the dead we leave behind;
Mourn for the passing of all joy;
Fearful days are on us now, and will continue so.
True greatness is now changed into deep sorrow.
Mourn for Troy's fall.

A girl is weeping
and saying, "O, mother,
the Greeks take me away,
lonely from your eyes
to the black ship."



Closed Chest Cardiac Massage

A NEW WAY TO SAVE LIVES

Hopkins scientists have develope w

THE HEART is an incredibly powerful and ingenious organ, pumping between five and ten tons of blood through the human circulatory system every twenty-four hours. Its steady rhythmic beat is the very symbol of life. When the heart stops beating, when the blood no longer flows, the inevitable process of death begins.

A common and dramatic type of heart failure is the cardiac arrest—the abrupt stopping of the heart beat. It may result from a number of things, including coronary thrombosis (a clot plugging a blood vessel in the heart), electric shock, fresh water drownings, and all known types of anesthesia. And it occurs in one of two ways: The heart may simply stop beating suddenly and become inert (standstill), or it may convulse into chaotic spasms as the muscle wall twitches and various

Using the closed chest massage which he and his associates developed, Dr. William B. Kouwenhoven keeps the blood circulating in an animal whose heart has stopped.

PHOTOGRAPHS BY RICHARD C. THOMPSON

After an experiment the men study blood pressure recordings. Left to right, standing are Dr. Jude, Mr. Knickerbocker, and Dr. Kouwenhoven; seated are Robert Stone and Dennis McCurdy, premedical students.

ope way to keep the blood circulating after the heart has stopped

groups of heart muscle fibers beat independently and without rhythm (ventricular fibrillation).

Although exact statistics are not available, it is estimated that one out of every thousand operations results in cardiac arrest. And cardiac arrest relating to surgery and anesthesia alone causes more deaths annually than a combination of poliomyelitis, multiple sclerosis, scarlet fever, typhoid, diphtheria, and several other commonly mentioned diseases.

Not many years ago, a victim of cardiac arrest faced almost certain death. And even as recently as six months ago, his chances for survival were slim indeed unless he happened to be very close to a hospital or a physician when the heart stopped. For in the great majority of cases, proper treatment must begin within three or four minutes after the heart stops. After that, the chances for survival decline rapidly, and the possibility of brain damage in those who do survive increases with each passing second.

Three or four minutes is barely enough time to implement the modern methods of heart resuscitation widely used today. When the heart is in standstill, for example, the accepted treatment is to open the chest (which takes a surgeon about one and a half minutes) and massage the heart with the fingers. This is a major operation and can be dangerous in itself. And although it may cause an inert heart to resume its normal beat, it won't stop fibrillation. For that, a special machine is used (a defibrillator) which sends sufficient electric current (1½ to 2 amperes) through the chest to the heart to cause it to contract. When the electric current is opened and the heart has become contracted, the

chaotic impulses cease. The normal heart beat resumes when the current is closed. Obviously, then, there has been little hope for the victim of cardiac arrest who has been more than a minute or two away from either a doctor or a defibrillator.

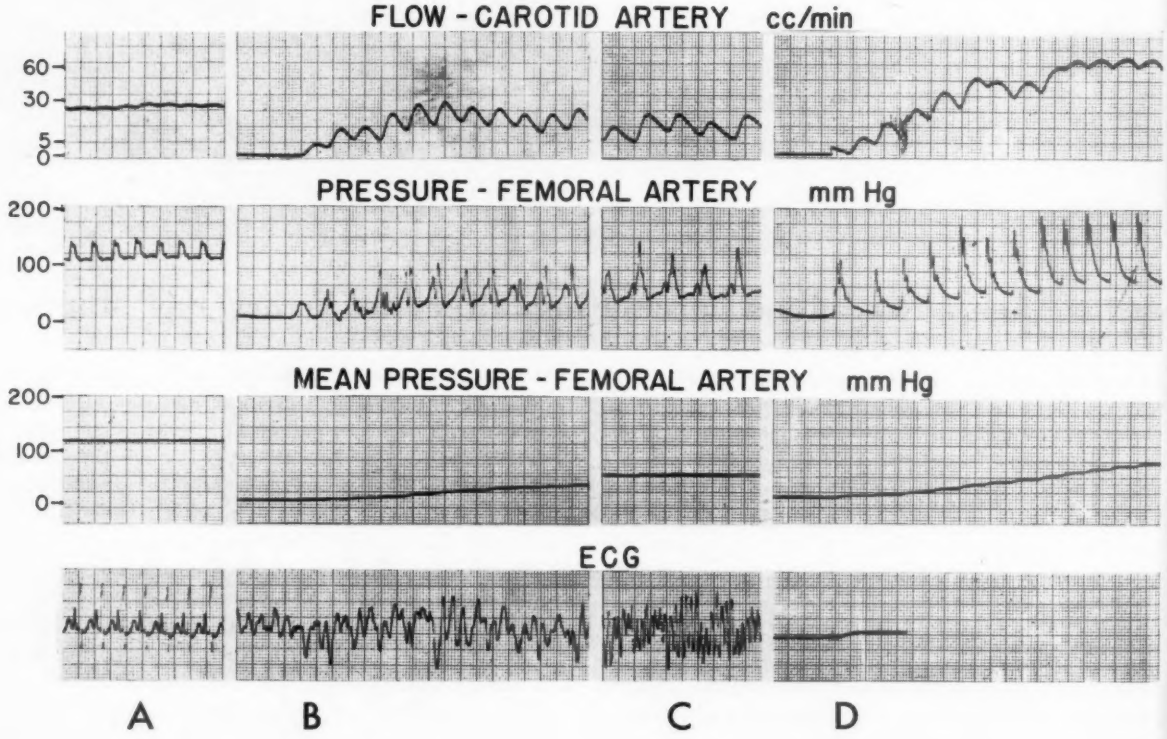
LAST JULY, the chances for survival of cardiac arrest victims were greatly increased when a team of scientists at Johns Hopkins announced a major breakthrough in emergency heart resuscitation. William B. Kouwenhoven, professor emeritus of electrical engineering and lecturer in surgery, James Jude, resident in surgery, and Guy Knickerbocker, electrical engineer and instructor in surgery, reported that they had developed a method of keeping the inert or fibrillating heart pumping blood indefinitely. And the method is so utterly simple that it can be used by anyone with two hands.

The Hopkins closed chest cardiac massage, which is now standard procedure in the Johns Hopkins Hospital, is no more difficult to administer than artificial respiration. The victim is placed on his back, and the operator places the heel of one hand on the lower part of the victim's sternum. He places the other hand on top of the first and pushes firmly on the breast bone every second or so. (See box on page 23.) Since the ribs are attached to the sternum with cartilage, which is very flexible in the unconscious patient, the chest can be compressed, squeezing the heart between the sternum and the spinal column and forcing the blood out of the ventricles. Enough pressure is maintained this way (40 per cent of normal circulation) to keep the victim's vital organs supplied with oxygenated blood, provided the lungs are simultaneously ventilated.

Simple as it is, the closed chest cardiac massage has tremendous implications. It alleviates the need for opening the chest and massaging the exposed heart—a procedure that may bruise and damage the heart. It solves the frustrating problem of how to get the patient to a physician or a defibrillator within three or four minutes after the heart stops, because closed chest massage enables anyone to restore heart action immediately and keep the blood circulating until a physician or a defibrillator can be reached. Although a good many cardiac arrests occur in hospitals, many occur on beaches, utility poles, and in the home. It is especially in these cases outside the hospital that the closed chest cardiac massage makes its unique contribution to the chances for survival.

THE SIMPLICITY of the closed chest massage tends to conceal the fact that it is the result of years of work and experience. The senior team member, Dr. Kouwenhoven, began working on defibrillation of the heart in 1928, when the field was still largely unexplored. He and two other Hopkins professors, R. D. Hooker and O. R. Langworthy, received a grant from Edison Electric Company to study the effects of electricity on the human body.

The three scientists became interested in ventricular fibrillation. They were not the first. Vesalius first described the phenomenon in the sixteenth century (and first attempted to resuscitate a non-beating heart). Others subsequently studied fibrillation, but without dramatic results, until two researchers in 1898 (Prevost and Batelli) devised an effective method for defibrillating an



The tracings above show the effectiveness of closed chest massage: (A) a normal heart; (B) the heart stops, but massage starts blood flowing; (C) after three minutes, pressure is maintained; (D) after nine minutes, defibrillation revives heart.

animal heart by applying directly to it 240 volts of alternating current.

Armed with the results of the Prévost and Batelli experiments, Drs. Kouwenhoven, Hooker, and Langworthy resuscitated exposed animal hearts with electric current, and worked at refining the technique. Their work aroused considerable interest and brought many scholars to Baltimore to discuss it with them. One such visitor was C. J. Wiggers of Western Reserve School of Medicine. Dr. Wiggers was convinced that the human heart could be defibrillated electrically, and he had machines set up to try it at Western Reserve. Finally in 1947, after five or six failures, an associate of Dr. Wiggers, Claude Beck, successfully defibrillated the heart of a 14-year-old boy—the first such case on record.

This was a major achievement, but the defibrillating still required working on the exposed heart. To avoid this major operation and the dangers inherent in it, Dr. Kouwenhoven began experimenting in 1951 with a defibrillating machine that would work effectively on the outside of the chest. He was getting good results on animals before long, but he wasn't satisfied that he'd found the best and safest placement for the electrodes. Until he was sure that he had, he would not use the defibrillating machine on humans. In 1954, he discussed the problem with Dr. Paul Zoll of the Harvard Medical School. Certain that it would work on humans, Dr. Zoll went back to Cambridge and began to use it clinically. In 1956, he reported the first successful closed chest defibrillation of a human heart.

In March, 1957, Dr. Kouwenhoven had perfected his technique of closed chest defibrillation to his own satisfaction and to that of Dr. Alfred Blalock, chairman of the department of surgery. The machine was made standard equipment at Johns Hopkins.

These were great steps forward in emergency heart resuscitation, but in the absence of closed chest massage, the big problem remained: how to get the defibrillator or a physician (to open the chest) to a cardiac arrest victim within three or four minutes after the heart stopped.

IT WAS in 1958, during an animal experiment with the defibrillator, that closed chest cardiac massage was born. Mr Knickerbocker noticed that the simple mechanical act of placing the heavy copper electrodes on a dog's chest caused a rise in blood pressure. Could this be significant, he wondered. Physicians said no. They explained that this rise in pressure was caused by pressing on the chest (as the pressure is increased inside a rubber ball that is squeezed) and that it had nothing to do with circulating the blood. This was a logical answer, but it didn't completely satisfy Guy Knickerbocker. He discussed his curiosity with Dr. Kouwenhoven and Dr. Jude, and they began squeezing the chests of experimental dogs and recording the results. They noticed that blood pressure rose each time they pressed firmly on the chest.

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How to Apply Closed Chest Massage

CARDIAC arrest—sudden stopping of the heart—may be caused by a number of things, including electrical shock, fresh water drowning, asphyxiation, and coronary thrombosis. The most obvious symptoms are absence of pulse and respiration. It is imperative that treatment begin before three minutes have passed, for if there is a lapse of more than three or four minutes between the stopping of the heart and the beginning of closed chest massage, the victim is less likely to survive and may suffer brain damage if he does.

If a telephone is close by when a cardiac arrest occurs, take a few seconds to summon an ambulance. Then begin closed chest massage as follows:

1. Place victim in prone position on his back on a firm support such as a table or the floor.
2. Raise his chin by extending his neck.
3. Place the heel of one hand on the lower one-third of the victim's sternum (breast bone).
4. Place the other hand directly on top of the first hand.
5. Press firmly with both hands.
6. When the sternum is depressed raise both hands from the chest to allow it to expand.
7. Repeat this process sixty to eighty times a minute.

Closed chest cardiac massage and mouth to mouth artificial respiration should be given simultaneously. If two people are present, one should begin the chest massage while the other begins mouth to mouth resuscitation, which is given as follows:

1. Pull the patient's tongue forward in his mouth.
2. Pinch the victim's nostrils closed.
3. Take a deep breath and exhale it into the patient's lungs by pressing your mouth over his.
4. Raise your mouth, thus allowing the victim to exhale.
5. Repeat this process about twelve to fourteen times a minute.

More cardiac arrests occur in children under ten years of age than in any other decade of life. In such cases, one hand is sufficient to depress the sternum, and care should be exercised not to exhale too much air into a child's smaller lungs.

Beneath All the Clangor

Continued from page 10

building after the fire was out. And journalism trailed in the Senator's wake—even McCarthy's critics conceded that the Communist Party was a serious problem—at the moment when the party, never large, was a diminishing shadow.

The best journalists are never quite up-to-date. De Tocqueville in 1837 saw an America so herd-like that his observations have served those of us in this generation who delight in dressing up our own flimsy observations with classic parallels. Yet De Tocqueville was writing about an America carrying in its bosom Thoreau, Melville, the whole Grand Armada, and Garrison and the Abolitionists and even Abraham Lincoln—none of them a concern of the current journalism. It seems in fact almost a mark of the best journalism to be wrong, as both Henry Mencken and Walter Lippmann were wrong in their estimate of the force of Franklin Roosevelt in 1932.

These, of course, were only the faults of one aspect of previous cultures. Our trouble is that journalism has come to seem our entire culture; our academicians join the crush to be current; and books that are no more than journalism are taught in our schools. Our young read them and hand them back to us, victims of the diet we served them.

Yet our betters will, I suspect, come along and remember the last six years as quite different from what we think them. We, as an instance, remember 1955 as the year of the popular distribution of *The Organization Man*; but others may remember it also as the year when a group of Negroes in Montgomery, Alabama, sat down together and haltingly and fearfully began to plan their program of refusing to ride buses so long as they were segregated.

That was an extraordinary notion for a time when it was popularly accepted that Americans no longer believed that man, acting by himself, could affect his own destiny.

That acceptance was, in its way, an inheritance of the Thirties. The Thirties were not the worst of times, and I am not here to condemn them. But if there was one thing which characterized us then, which made us different from previous generations of the young, it was our image of man the collective, expressing himself through an institution.

We were thus a political generation; the unexamining journalism of the time did not report individual but collective dissent: "A Million Students Strike Against War."

The CIO was, as an instance, *my* institution contending against *their* institution, the NAM, I suppose. When I say that my generation was political and that the new one seems to me nonpolitical, I am not judging between values. My own bias, to my sorrow, is rather anti-institutional and anti-political; I say "to my sorrow" because it is not pleasant to feel oneself unrepresented and alone.

All the same, out of the institutional urge, we had created a collective society, whose very instruments of protest were themselves collective. *The Organization Man* was a best seller among persons who had, generally speaking, lost faith in the potential of the individual personality, who had, in Hemingway's words, signed a separate peace.

THE NEGROES of Montgomery had no institutions; they were outside the collective. Even the National Association for the Advancement of Colored People was, for them, a distant voice—brought to their consciousness mostly on the lips of their enemies. They could only assert the traditional, almost forgotten, dignity of the individual. Later, when their protest had become a legend, men searched in it for distant models; some of its leaders even thought of themselves as Ghandi-ites. Yet their impulse was native; they were really a survival of that America which historically has fed itself from below.

A poetry half forgotten had returned to the national life. These were people about whom novels could be written. Our society had not abolished all previous centuries, nor all previous generations. Heroes were walking the countryside again.

And I think that the generation—quiet, rootless, conforming, choose the tag-line you please—which is embalmed in all the college libraries passed quietly that day in Montgomery from whatever life it had to the stuff of journalism. It passed without our ever really knowing whether the attitudes it expressed ever really existed, although the setting for them did and still does.

What has taken that generation's place may not be typical. But then, only in very boring times, are serious observers forced to settle for the typical. I cannot really concern myself with children at Newport throwing beer cans at Marines when I am confronted with the sight of other children sitting down at Southern lunch counters and patiently enduring the slaps and taunts of their elders. Once we are again permitted to see the face of one of these children, what, from then on, can we really care about statistical averages?

AND EVEN our society seems once again to count not heads but degrees of feeling. The Democratic and Republican platforms on civil rights in 1956 were proof to all the exhortations from the spokesmen of institutions; this year, after the lunch counter protests, they fell meekly into line. We have learned again that history can be altered by lonely, enduring persons. A few from my generation taught us that; a few from the newer generation have also taught us that; they are the ones other generations will remember.

I remember, not always with shame, the minority of my generation which concerned itself with social issues. There was one difference between us and that minority of the new generation which shows its face now. That difference was not in our favor.

We spoke, or thought we spoke, for groups and not for individuals. The difference seemed to me most profound when the newspapers published the pictures of the young people from San Francisco picketing Caryl Chessman's prison the night before his execution.

We would not have done that. I do not remember us as particularly concerned with capital punishment; in any case we would not have protested for a man who was definably and indubitably an innocent victim. We thought of ourselves as fighting for the class and not the individual; and here were children picketing against the state, the ultimate institution.

We see in these children the return of the private man, making his lonely decision. Beneath all the clangor, the mind once again begins to move upon silence.

A Johns Hopkins Gazette

AN UNOFFICIAL COMPENDIUM OF FACULTY AND ALUMNI APPOINTMENTS, HONORS, AND ACCOMPLISHMENTS

THE FACULTY

PRESIDENT MILTON S. EISENHOWER has been awarded the honorary degree of doctor of laws by Swarthmore College.

AMONG THE MEMBERS OF THE BOARDS OF TRUSTEES, DAVID K. E. BRUCE, University trustee, has been presented the honorary degree of doctor of laws by Princeton University.

VANNEVAR BUSH, LL.D. '40 (hon.), trustee emeritus, has been awarded the honorary degree of doctor of science by Boston University.

THOMAS B. BUTLER, University and Hospital trustee, has been elected to the board of directors of the United States Fidelity and Guaranty Company.

ROBERT D. H. HARVEY, B.S. '53, University trustee, has been appointed a director of the Eutaw Savings Bank in Baltimore.

WILLIAM E. MCGUIRK, JR., Hospital trustee, has been elected to the board of directors of Mount Vernon Mills, Inc.

JOHN M. NELSON, B.A. '03, University trustee emeritus, and WALTER F. PERKINS, University trustee and president of the Hospital board of trustees, have been elected to the board of directors of the Baltimore Gas and Electric Company.

IN THE ADMINISTRATION, LEO GEIER, assistant director of public relations, has resigned to become associate director of university relations at Stanford University.

HAROLD E. INGLE, director of the Johns Hopkins Press, has been elected to the board of directors of the American Book Publishers Council for a three-year term.

GAVIN A. PITT, M.ED. '59, vice-president of the Hospital and University and president of the Johns Hopkins Fund, has resigned to become president of the Presbyterian-St. Luke's Hospital in Chicago.

KEITH SPALDING, secretary of the University, has been elected secretary of the University board of trustees.

IN THE SCHOOL OF ENGINEERING, ABEL WOLMAN, B.A. '13, B.S. IN ENG. '15, DR.ENG. '37 (hon.), has become professor emeritus of sanitary engineering and water resources; and GUY L. BRYAN, B.S. IN ENG. '17, M.E. '22 (civil), has become professor emeritus of aeronautics.

ALEXANDER GRAHAM CHRISTIE, professor emeritus of mechanical engineering, has been awarded the Distinguished Service Citation by the College of Engineering at the University of Wisconsin.

JERALD L. ERICKSEN has been promoted to professor of theoretical mechanics.

C. HARVEY PALMER, JR., has been appointed assistant professor of electrical engineering.

OWEN M. PHILLIPS has been promoted to associate professor of fluid mechanics.

ERIC WEGER, B.E. '51, M.S. IN ENG. '53, DR.ENG. '55 (chemical), has resigned as assistant professor of chemical engineering to become associate professor of engineering at the University of Oklahoma.

AT THE SCHOOL OF MEDICINE, the following have been appointed to emeritus status: NICHOLSON J. EASTMAN, professor emeritus of obstetrics; WILLIAM F. RIENHOFF, JR., M.D. '19, professor emeritus of surgery; RICHARD W. TELINDE, M.D. '20, professor emeritus of gynecology; and JOHN C. WHITEHORN, professor emeritus of psychiatry.

The following have been promoted to the rank of full professor: SAMUEL P. ASPER, JR., M.D. '40, associate dean of the School, VICTOR A. MCKUSICK, M.D. '46, and JOHN EAGER HOWARD, M.D. '28, in medicine; and WARFIELD M. FIROR, B.A. '17, M.D. '21, in surgery.

WALTER H. SHELDON, former professor and chairman of the department of pathology at Emory University, has been appointed professor of pathology.

IRVING H. LEOPOLD has been appointed professor of ophthalmology.

ALLYN W. KIMBALL has been appointed professor and director of the department of biomathematics.

The following have been promoted to the rank of associate professor: THOMAS A. STAMEY, M.D. '52, in urology; ANDREW G. MORROW, M.D. '46, in surgery; HAROLD ROSEN, in psychiatry; THOMAS C. BRUICE, in physiological chemistry; LEON P. WEISS, in anatomy; DANIEL J. TORRANCE, JR., M.D. '49, JULIAN O. SALIK and RICHARD S. ROSS (he is also associate professor of medicine), in radiology; WILLIAM R. MILNOR, JR., M.D. '44, JULIUS R. KREVANS, DUDLEY P. JACKSON, M.D. '47, DOUGLAS G. CARROLL, JR., M.D. '42 (he is also assistant professor of public health administration in the School of Hygiene), in medicine; and ROBERT M. BLIZZARD and CLAUDE J. MIGEON, in pediatrics.

The following have been promoted to the rank of assistant professor: SONIA F. OSLER, M.A. '51, PH.D. '53 (psychology), in pediatrics and medical psychology; ALVAH H. PHILLIPS, PH.D. '57 (physiological chemistry), in physiological chemistry; IRWIN M. WEINER, in pharmacology and experimental therapeutics; GEORGE B. UDVARHELYI, in neurological surgery; ROBERT F. HUSTEAD, in anesthesiology; DAVID L. FILTZER, B.A. '36, in orthopedic surgery; RICHARD W. STEENBURG and ROBERT C. CHAMBERS, in surgery; ROBERT E. MASON, M.D. '42, ATTILIO D. RENZETTI, JR., and JULIAN W. REED (he is also an instructor in psychiatry), in medicine; JOHN H. MENKES, M.D. '52, FREDERICK L. RICHARDSON, SAUL W. BRUSILOW, EDWARD W. HOPKINS, M.D. '49, MARY ELLEN AVERY, M.D. '52, in pediatrics; WILLIAM M. SHELLEY, M.D. '53, and JAMES C. BRENNAN, in pathology; GERALD J. GRUMAN, in history of medicine; EDWARD R. DANA, M.D. '44, GUNTER SCHULTZE, and MARTIN W. DONNER,

NEW TRUSTEE

J. H. FITZGERALD DUNNING

J. H. FITZGERALD DUNNING, B.A. '24, PH.D. '27 (chemistry), has been elected an alumni member of the University board of trustees for a six-year term. Dr. Dunning is president of Hynson, Westcott and Dunning, a pharmaceutical firm, and is a member of the visiting committee for the physical sciences.

in radiology; and TIBOR BORSOS, SC.D. '58 (hygiene), ERNEST W. SMITH (he is also associate professor of medicine), and ALLAN H. LEVY, in microbiology.

E. COWLES ANDRUS, M.D. '21, associate professor of medicine, has been appointed editor-in-chief of the American Heart Association's monthly publication, *Modern Concepts of Cardiovascular Disease*.

HARRY L. BERMAN, has been appointed assistant professor of radiology. He has also been appointed head of the division of radiation therapy and isotopes at Sinai Hospital in Baltimore.

KATHERINE H. BORKOVICH, M.D. '39, assistant professor of pediatrics, has been honored by her alma mater, Geneva College, for her accomplishments in the field of medicine.

EDWIN N. BROYLES, M.D. '19, associate professor of otolaryngology, has been elected president of the American Laryngological Association.

BARTON CHILDS, M.D. '42, associate professor of pediatrics, has been elected vice-president of the Society for Pediatric Research.

WHITMER B. FIROR, B.A. '23, M.D. '27, assistant professor of radiology, has been elected president of the Medical and Chirurgical Faculty of Maryland.

HAROLD E. HARRISON, associate professor of pediatrics, has received the Borden prize from the American Academy of Pediatrics for his studies of the physiology of calcium and Vitamin D.

LEO KANNER, professor emeritus of child psychiatry, has received the first annual award of the National Organization for Mentally Ill Children.

ARNOLD R. RICH, M.D. '19, Baxley professor emeritus of pathology, has been awarded the Trudeau Medal by the National Tuberculosis Association for his distinguished service in the field of chest diseases.

JERZY E. ROSE, associate professor of physiology and psychiatry, has become professor of neurophysiology at the University of Wisconsin.

SAMUEL WHITEHOUSE, who has been on the faculty since 1927, has become instructor emeritus of medicine.

PATRICK B. STOREY, assistant professor of medicine, has resigned to become associate professor of medicine at the University of Maryland.

ISODORE TUERK, B.A. '31, assistant professor of psychiatry, has been appointed commissioner of mental hygiene for the state of Maryland.

THOMAS B. TURNER, dean of the School and professor of microbiology, has been elected secretary of the board of visitors and governors of St. John's College in Annapolis. Dr. Turner has also been elected an honorary member of Phi Beta Kappa.

AT THE SCHOOL OF HYGIENE AND PUBLIC HEALTH, the following have been appointed to the rank of assistant professor: ROLAND F. BEERS, JR., and JOHN T. FALES, B.A. '50, SC.D. '57 (hygiene), in environmental medicine; TIBOR BORSOS, SC.D. '58 (hygiene), ERNEST W. SMITH (he is also associate professor of medicine), and ALLAN H. LEVY, in microbiology.

ERNEST BUEDING, former professor and chairman of the department of pharmacology at Louisiana State University, has become professor of pathobiology.

ALLYN W. KIMBALL has been appointed professor and director of the department of biostatistics.

JAMES M. MOZLEY has been appointed associate professor of radiological science. He will continue as associate professor of radiology in the School of Medicine.

ERNEST L. STEBBINS, dean of the School, has been presented the Alumni Distinguished Service Award from his alma mater, Drake University.

DANIEL M. WILNER, asssociate professor of biostatistics, has become associate professor of behavioral studies in public health at the University of California.

IN THE FACULTY OF PHILOSOPHY, ERNEST F. PENROSE has become B. Howell Griswold, Jr. professor emeritus of geography and international relations.

The following have been appointed to the rank of full professor, FRANCIS D. CARLSON, B.A. '42, in biophysics; ELLIOTT COLEMAN, in English writing; JOHN WALTON, PH.D. '50 (education), in education; HANS P. EUGSTER, in geology; and GEORGE E. OWEN, in physics.

The following have been promoted to the rank of associate professor: GORDON FELDMAN, in physics; PHILIP E. HARTMAN and SIGMUND R. SUSKIND, in biology; BERNARD M. DWORK and GERALD WASHNITZER, in mathematics; EDWIN S. MILLS, in political economy; CHARLES A. THOMAS, JR., in biophysics; ALEX NICKON and EMIL H. WHITE, in chemistry; JOHN C. GOODLETT, in geography; and RICHARD H. GREEN, in English.

WILLIAM F. ALBRIGHT, professor emeritus of Semitic languages, has been named the first professor of archaeology at the Jerusalem school of the Hebrew Union College-Jewish Institute of Religion for the second term.

DAYTON E. CARRITT, associate professor of oceanography and assistant director of the Chesapeake Bay Institute, has resigned to accept a joint appointment at Massachusetts Institute of Technology and the Woods Hole Oceanographic Institution.

LUDWIG EDELSTEIN, professor of humanistic studies, has accepted a professorship at The Rockefeller Institute. He will continue at Johns Hopkins as part-time professor of classical philosophy.

BENTLEY GLASS, professor of biology, has been named chairman of the Biological Sciences Curriculum Study, an educational program of the American Institute of Biological Sciences, which is investigating improvement and modernization of biology curricula in American high schools.

HENDRIK F. HAMEKA has been appointed assistant professor of chemistry.

THOMAS R. HART, JR., assistant professor of Romance languages, has been appointed associate professor of Romance languages at Emory University.

HAROLD JANTZ, professor of German, has been awarded the honorary degree of doctor of letters by Oberlin College.

ADOLF KATZENELLENBOGEN, professor and chairman of the department of fine arts, has been elected an honorary member of Phi Beta Kappa.

SIMON S. KUZNETS, professor of political economy, has resigned to become professor of economy at Harvard University.

FRITZ MACHLUP, Abram G. Hutzler professor of political economy, has become Walker professor of economy and international finance at Princeton University. He will continue at Johns Hopkins as honorary professor of political economy for the 1960–61 academic year.

LEON MADANSKY, professor of physics, is on leave of absence for the current academic year to do research at Cern Laboratory in Geneva, Switzerland.

ELMER V. MCCOLLUM, professor emeritus of biochemistry, has been designated Benjamin Franklin Fellow by the Royal Society of Arts, London.

FREDERICK A. OLAFSON, formerly assistant professor of philosophy at Vassar College, has accepted an appointment as associate professor of philosophy. He will be on leave of absence for the 1960–61 academic year.

FRANCIS J. PETTIJOHN, professor of geology, and CARL P. SWANSON, William D. Gill professor of biology, have been elected fellows of the American Academy of Arts and Sciences.

EARL R. WASSERMAN, professor of English, has assumed the rotating chairmanship of the department of English. He will succeed Professor Don Cameron Allen.

BOOKS

WALTER R. AGARD, fellow '23–'25 (archaeology): *What Democracy Meant to the Greeks* (Wisconsin, $1.75).

GORDON E. BIGELOW, M.A. '47, PH.D. '50 (English), and David P. Harris, editors: *The United States of America: Readings in English as a Second Language* (Holt, Rinehart and Winston).

GEORGE BLUESTONE, PH.D. '56 (aesthetics of literature): *The Private World of Cully Powers* (Doubleday).

DANIEL HOVEY CALHOUN, PH.D. '56 (history): *The American Civil Engineer: Origins and Conflicts* (M.I.T., $5.50).

JAMES S. COLEMAN, associate professor of

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News from Johns Hopkins

A CONCISE REVIEW OF INTERESTING AND SIGNIFICANT EVENTS AND DEVELOPMENTS AT JOHNS HOPKINS

● The first major expansion in enrollment in the School of Medicine in more than thirty-five years will begin in the fall of 1961, when the entering class will be increased from seventy-five to ninety students. Similar increases in the succeeding three years will bring the total enrollment in 1964 to 360, an increase of 20 per cent over the present enrollment of 300.

Of the ninety members of each entering class, from twenty to twenty-five will be special students under the Revised Medical Program, having already studied one year at Johns Hopkins following the sophomore or junior year of college. (Under the Revised Medical Program, the first year of a customary four-year medical course is designated as "Year II," the special pre-baccalaureate year as "Year I.")

The enrollment increase has been made possible by recent expansion of teaching facilities, notably the new $5,000,000 basic science building, and by an increase in funds to support the needed additional faculty and staff.

About 1,000 applications for admission to the School of Medicine are received every year. Since many of those who meet all the requirements for admission must be turned down, there is no danger that the increased enrollment will adversely affect the over-all quality of the student body. (See article beginning on page 4 of this issue.)

● A new high-speed digital computing machine has been put into operation at the Applied Physics Laboratory in Howard County, Md. The transistorized computer, which will perform most of the data processing for APL's Transit satellite program and a testing program on the Polaris missile, operates five to eight times faster than the present computing equipment which is only four years old. In one shift, it can handle about 40 per cent more computing than the present equipment handles during around-the-clock operation.

The computer is housed in a temporary building while its permanent home is under construction. It is scheduled for removal to the new building next January.

Also under construction at APL's Howard County facility is a building to house experimental radar equipment. Research conducted here, under the sponsorship of the Bureau of Naval Weapons, is expected to yield significant advances in both search and guidance radar and weapons direction equipment.

● In October, the first issue of a new magazine for European readers will be published under the auspices of the Johns Hopkins Bologna Center of American Studies. Called *The American Review*, the English language publication will attempt to correct distortions and supply basic information about contemporary American society. Each quarterly issue will have a central theme; the October issue, for example, will deal with American politics, and contain articles by Henry Steele Commager and five other prominent university professors.

● For the first time in twelve years, this fall's television listings will not include *Johns Hopkins File 7*. Explaining why the award-winning educational program has been discontinued, president of the University Milton S. Eisenhower announced last spring that "the business of creating, producing, and presenting a weekly program has become increasingly burdensome." He pointed out that the activities of the University and its faculty have burgeoned, making it impossible to produce shows of the high quality that the television audience has come to expect in *File 7*.

Created by Lynn Poole, director of public relations, in 1948 as *The Johns Hopkins Science Review*, the program has received many awards, including the George F. Peabody Citation in 1950 and 1953. It was the first TV show from any university to go on a network (CBS at first, later to ABC). It was the first American program to be seen in Europe, Mexico, and Puerto Rico, and the first to be carried regularly by the Canadian Broadcasting Company. It presented the first films of the earth taken from a rocket, and the first telecast of childbirth.

In one way, and in an entirely different medium, *File 7* continues. In 1958, the University began distributing a weekly newspaper column, dealing mainly with the work of Hopkins scholars, called *From File 7*. Appearing under Mr. Poole's by-line, and written by him and his two assistants, Leo Geier and James Butler, the column has met with amazing success. It reaches thirteen million U. S. and Canadian readers through 170 newspapers, and is distributed to 110 foreign outlets by the United States Information Agency. It is one of the largest syndicated columns in existence today, and it, like its television predecessor, has begun its string of "firsts" and awards: It is the first successful national column from a university, and it received "The Best in the Nation Award" last summer from the American College Public Relations Association.

● Beginning September, 1961, tuition for students in all schools of the University will be increased to $1,450. For the present academic year, tuition remains at $1,200. In a letter sent to all graduate and undergraduate students last month, Vice-President P. Stewart Macaulay explained that even after the increase, Hopkins tuition will pay only a portion of the total cost of each student's education. The rest must be made up from endowment income and outside contributions.

A study of tuition rates at similar institutions indicates that, despite the $250 increase, Johns Hopkins will continue to compare favorably.

A New Way to Save Lives

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To see if the blood was being moved, they injected dye into the heart and began to press rhythmically on the chest. After a short time, the dye appeared in an artery.

Convinced that squeezing the chest moved the blood, the men began to search through medical literature for reports of similar experiments. They found records of a man who in 1878 resuscitated cats by squeezing their chests, but he often did serious damage to their internal organs. The Hopkins scientists began experimenting to find the best position for the hands, the proper amount of pressure, the most effective rhythm. At first, they broke a few ribs and caused other injuries, but eventually, they found that by pressing rhythmically on the lower part of the animal's sternum, they could restore 40 per cent of the normal blood circulation—and they could do it for more than thirty minutes.

Dr. Jude had been the first of the medical people to realize that closed chest cardiac massage was a major accomplishment. He not only worked closely with Dr. Kouwenhoven and Mr. Knickerbocker, he undertook the missionary work among the medical staff to acquaint them with the technique. When a cardiac arrest occurred, Dr. Jude would immediately begin closed chest massage until the chest was opened or the defibrillator applied. He demonstrated the technique to other physicians and medical students, showing clearly that it worked. Then Dr. Blalock, convinced by the animal experiments, approved the clinical use of the closed chest cardiac massage. Until it had been thoroughly tested, however, it would not be reported.

From May, 1959, to February, 1960, the closed chest massage was used on twenty patients, ranging in age from two months to eighty years. The duration of the massage lasted from one minute to sixty-five minutes (and it could conceivably last for hours). Three of the patients were fibrillating; the others were in standstill. Thirteen of the patients simultaneously received mouth to mouth artificial respiration. All twenty patients were resuscitated and fourteen of them are still alive without any damage to the central nervous system. The technique had proven to be successful in 70 per cent of the cases. (In the first 1,710 cases collected for the Cardiac Arrest Registry, which were mostly open heart massage cases, 29 per cent survived.)

Since the announcement of closed chest massage in the Journal of the American Medical Association last July, more than thirty-five additional patients have been given closed chest massage treatment. Three out of four have survived without any damage to the central nervous system. When the technique has been used in operating rooms, where most of the cardiac arrests occur (and where the people and facilities are ready for any emergency), it has been 100 per cent successful.

The announcement of the closed chest cardiac massage aroused immediate interest (and some skepticism because of its simplicity) around the world. Dr. Kouwenhoven and his associates were called upon to demonstrate the technique. They have instructed the Baltimore Fire Department and its ambulance drivers in its proper use (and they are now using it with gratifying results), and they have demonstrated the technique for physicians, hospital staffs, military personnel, and others in and around Baltimore.

Each day brings requests from physicians, industry, and government officials for more information on the resuscitation technique. "We have more invitations to make speeches than we can handle," Dr. Kouwenhoven says, "and we're busy trying to adapt this technique so it can be administered vertically to linemen who are electrocuted while atop poles and dangle there dying."

The American Heart Association has volunteered to educate the public and is presently planning a publicity campaign. Smith, Kline and French Laboratories has contributed the funds to make a movie of the technique for distribution to the nation's medical centers. Emergency resuscitation was the main topic for discussion at the annual meeting of the Maryland Medical and Chirurgical Faculty in Ocean City, Maryland, in September.

Those who have seen the closed chest cardiac massage work are enthusiastic about it. It has even been compared in significance to the Blalock-Taussig "blue baby" operation. In any case, it must be considered a major accomplishment in medical research.

The Crisis in Medical Education

Continued from page 7

years. But the problem is of national proportions, and it requires broad planning, huge amounts of money, and immediate action. This suggests a third alternative—and the one which each of the three consulting committees recommends—of an extensive program of federal aid to medical education to supplement local, state, and private support.

Federal participation in medical research has been extensive, but up to now, no federal money has been spent on medical education, although "spill-over" from research grants obviously benefits educational programs by providing staff, space, and facilities. (Medical research expenditures totaled $400 million in 1958, of which over half was provided by the federal government. Pending legislation seeks $664 million for the 1961 budget of the National Institutes of Health, an increase of $264 million over 1960. One adviser to the government on medical research matters seriously doubts that there are enough M.D.'s available to spend that much on research wisely.) Both political parties recently endorsed the principle of federal aid to medical education in their convention platforms. And legislation now before Congress would contribute greatly to the expansion and modernization of existing facilities.

But federal aid to medical education is an issue guaranteed to raise tempers in the medical profession, despite the fact that the government's gigantic research program has worked very well. Traditionally, the AMA has opposed federal aid to medical education. At a recent legislative work session of the Southern Regional Education Board, chairman of the AMA's board of trustees, Julian Price, said from the floor in open discussion that when you ask for federal aid, you ask for federal control. The mere mention of federal aid raises the specter of socialized medicine. The Bayne-Jones Report states, "a danger is that dependence upon federal funds will lead to various kinds and degrees of federal control over individuals and institutions," then lists ways to avoid this control.

Many professionals object to the AMA's position and even see it working

against the profession. Former chairman of the Democratic National Committee, Paul Butler, recently warned the officers of state medical associations that ". . . if socialized medicine should come to our country it may well be that the medical profession itself may have brought it about." Lowell Coggeshall, dean of Chicago's medical school and former president of the AAMC says: "Has the time arrived for some federal support of basic operations within our medical schools? If we are realistic, we must recognize, in principle at least, it arrived some time ago." And he goes on, "Is the freedom of the university and its medical school likely to be trespassed or dominated by federal assistance in general funds? The answer in my opinion is no. We have had ten years of experience and have observed government dependence upon non-bureaucratic talent for both policy and operational guidance. In practically every role, one can see the paramount influence of the university scientist and educator, and although there have been shortcomings in the over-all program, one can only praise those early leaders who established such a sound program. If control is to be lost, it will not occur as a result of some additional general support dollars, but from our own weakness. Actually, there is no more to fear with federal than with state tax dollars—probably less. I strongly hold that most education is the responsibility of the state; but it must be recognized that medical education and research are dependent upon schools' having a national character and function."

Many agree, and feel that if the AMA and other opponents of federal aid would spend as much time and effort guiding legislation as they spend trying to prevent it, wise laws could be enacted. For here, according to Dean Turner, is the rub. "It is not a question of whether or not we'll have federal aid. The answer to that is yes. It is a question," says Dr. Turner, "of how the aid will be given. We cannot afford a crash program, ill-conceived and improperly administered."

WHEREVER the money comes from, we must assume it will be made available. And although it will go a long way toward solving the problems, money won't yield all the answers. More money—in the form of construction grants, operating support, and student aid—should have a healthy effect on

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U. S. medical education as it was fifty years ago

THE FAMOUS FLEXNER REPORT REVEALED GROSS INADEQUACIES IN MOST SCHOOLS

DESPITE the gravity of the present situation in American medical education, the conditions are not as dire as those revealed by Abraham Flexner (B.A. '86) in his devastating report exactly fifty years ago.

Under the auspices of The Carnegie Foundation for the Advancement of Teaching, Flexner visited and investigated the 155 medical schools in the U. S. and Canada. Bad as it was in 1910, medical education was still an improvement over what it had been in the nineteenth century when America had 457 medical schools, most of which were purely commercial ventures that literally sold degrees. Of all the physicians who practiced between 1800 and 1900, only 10 per cent bothered to get a medical degree. And 80 per cent had never attended a single formal exercise in any school.

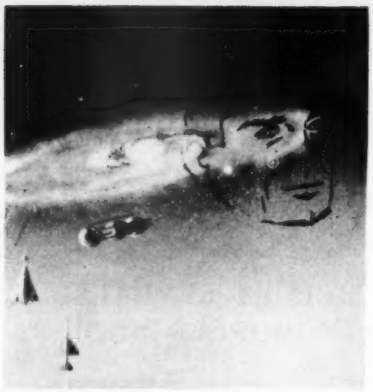
Early in this century, medical education was still largely a proprietary business. In his brilliantly penetrating and ruthlessly objective report, Flexner exposed half the medical schools as frauds and most of the rest as grossly inadequate. In 1910, medical schools consisted of: those that required two or more years of college preparation—sixteen such schools existed and thirteen more were raising standards that year; those that demanded graduation from a four-year high school or the "equivalent"—fifty such institutions, most of which admitted students on the basis of the "equivalent"; and those that asked little or nothing more than the rudiments or the recollection of a common school education—seventy-six such frauds.

The nation's youth flocked to these institutions in great numbers, lured by newspaper advertising and enchanting brochures. (Flexner stated that "the deans of these institutions occasionally know more about modern advertising than about modern medical teaching.") The tuition fees were divided among the doctors who ran the school in their spare time, and the operation of a medical school became such a lucrative business that any time six or more physicians gathered in an area, a medical school was likely to be born. The physician-population ratio was one doctor for every 568 people.

The medical curriculum of these medical schools would have been ludicrous had it not been so grave a danger to the naïve patients who were later its victims. The teaching, except for a little anatomy, was wholly didactic. Laboratory facilities were rare. And the entire course of study often lasted only a year.

State by state, Flexner appraised and evaluated the nation's medical schools. He was merciless in his analysis of the university schools as well as the independent schools. (The roster of medical schools which he denounced in 1910 included names that are esteemed today.) He pleaded for an overhaul of medical education, and, he pointed to Johns Hopkins as a model. He said of Johns Hopkins: "This was the first medical school in America of genuine university type, with something approaching adequate endowment, well equipped laboratories conducted by modern teachers devoting themselves unreservedly to medical investigation and instruction, and with its own hospital in which the training of physicians and the healing of the sick combine to the infinite advantage of both. The influence of this new foundation can hardly be overstated. It has finally cleared up the problem of standards and ideals; and its graduates have gone forth in small bands to found new establishments or to reconstruct old ones."

Half the 155 medical schools closed after the publication of the Flexner Report. Those that remained faced a formidable challenge: to equip themselves physically and intellectually to meet the promise of the rapidly advancing science of medicine.



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social relations, and Gabriel A. Almond, editors: *The Politics of the Developing Areas* (Princeton, $10).

PAUL F. CRANEFIELD, fellow '51–'53 (biophysics), and Brian F. Hoffman: *The Electrophysiology of the Heart* (McGraw-Hill, $12.50).

PAUL EMMETT, W. R. Grace professor of chemistry, editor: *Catalysis* (Reinhold; Chapman and Hall, $13.50).

The late ABRAHAM FLEXNER, B.A. '86, LL.D. '49 (hon.): *I Remember*, a revised autobiography (Simon & Schuster, $5).

GEORGE GIBIAN, M.A. '47 (SAIS): *Interval of Freedom: Soviet Literature During the Thaw, 1954–1957* (Minnesota, $4.25).

ROBERT A. GORDON, B.A. '28, and James E. Howell: *Higher Education for Business* (Columbia, $3.50).

MANFRED GUTTMACHER, B.A. '19, M.D. '23, house staff '24–'25, assistant professor of psychiatry: *The Mind of the Murderer* (Farrar, Straus and Cudahy, $4.50).

SIMEON K. HENINGER, JR., PH.D. '55 (English): *A Handbook of Renaissance Meteorology* (Duke, $7.50).

SIMON KUZNETS, fac. '54–'60 (political economy): *Economic Growth* (Free Press, $3.50).

EINAR LEIFSON, fac. '29–'37 (bacteriology): *Atlas of Bacterial Flagellation* (Academic Press, $7.50).

ALEXANDER H. LEIGHTON, M.D. '36, fac. '37–'42, house staff '36–'41 (medicine, psychiatry): *My Name is Legion* (Basic Books, $7.50).

G. E. LYNN, M.E. '58 (electrical), T. J. PULA, M.E. '50, DR.ENG. '57 (electrical), J. F. Ringelman, and F. G. Timmel: *Self-Saturating Magnetic Amplifiers* (McGraw-Hill, $8).

WALLACE MCCLURE, fac. '36–'37 (political science): *World Legal Order: Possible Contributions by the People of the United States* (North Carolina, $7.50).

The late THEODOR E. MOMMSEN, fellow '36–'37 (history): *Medieval and Renaissance Studies* (Cornell, $5.75).

SAMUEL E. MORISON, fac. '41–'42 (history): *The Story of Mount Desert Island* (Atlantic-Little Brown, $3.50).

ALAN MOZLEY, G. '28–'32, fellow '34–'35, fac. '35–'36 (zoology): *Consequences of Disturbance* (Lewis, London).

MARK M. RAVITCH, M.D. '34, associate professor of surgery: *Intussusception in Infants and Children* (Charles C. Thomas, Springfield).

ROBERT RESNICK, B.A. '43, PH.D. '49 (physics), and David Halliday: *Physics for Students of Science and Engineering* (John Wiley, $6).

SAMUEL R. M. REYNOLDS, fac. '48–'55 (obstetrics), and Benjamin W. Zweifach, editors: *The Microcirculation: Factors Influencing Exchange of Substances across Capillary Wall* (Illinois, $4.50).

LOUIS D. RUBIN, JR., M.A. '49 (English writing), PH.D. '54 (Aesthetics of Literature): *No Place on Earth* (Texas, $2.50).

RICHARD M. SCAMMON, fac. '57–'58 (SAIS), editor: *America Votes 3: A Handbook of Contemporary American Election Statistics* (Pittsburgh, $12.50).

KARL SHAPIRO, arts '37–'39, fac. '47–'50 (writing): *In Defense of Ignorance* (Random House, $4).

KARL SHAPIRO, arts '37–'39, fac. '47–'50 (writing), James E. Miller, Jr., and Bernice Slote: *Start with the Sun* (Nebraska, $4.75).

RICHARD H. SHRYOCK, professor emeritus of the history of medicine: *Medicine and Society in America, 1660–1860* (New York, $4); and *The University of Pennsylvania Faculty* (Pennsylvania, $5).

ALEXANDER F. SKUTCH, B.A. '25, PH.D. '28 (botany), Johnston scholar '28–'30 (biology, botany): *Life Histories of Central American Birds II* (Cooper Ornithological Society, Berkeley).

ELMER SUHR, M.A. '25, PH.D. '26 (classical archaeology): *The Ancient Mind and Its Heritage*, Vol. 2 (Exposition, $5).

CHARLES A. H. THOMSON, fac. '53–'54 (SAIS), and Frances M. Shattuck: *The 1956 Presidential Campaign* (Brookings Institution, $5).

FRANK N. TRAGER, G. '28–'33 (philosophy), editor: *Marxism in Southeast Asia: A Study of Four Countries* (Stanford, $7.50).

IRA O. WADE, B.A. '16: *Voltaire and "Candide"* (Princeton, $8.50).

C. VANN WOODWARD, professor of American history, editor: *Cannibals All! Or Slaves Without Masters* by George Fitzhugh (Harvard, $4.25).

LOUIS B. WRIGHT, Johnston scholar '27–'28 (English): *The Atlantic Frontier: Colonial American Civilization (1607–1763)* (Cornell, $3.75).

Following is the fall list of books published by the Johns Hopkins Press with approximate publication dates and estimated prices:

GEORGE KORSON: *Black Rock: Mining Folklore of the Pennsylvania Dutch* (November, $7.50).

GEORGE KORSON: *Pennsylvania Songs and Legends* (November, $7.50).

ROBERT W. TUCKER, associate professor of political science: *The Just War* (November, $4.50).

ROBIN W. WINKS, PH.D. '57 (history): *Canada and the United States* (October, $7.50).

JOHN ISE: *Our National Park Policy* (November, $10).

SAM H. SCHURR, BRUCE C. NETSCHERT, VERA F. ELIASBERG, JOSEPH LERNER, B.A. '43, and HANS H. LANDSBERG: *Energy in the American Economy, 1850–1875* (November, $12.50).

Continued on page 32

The Crisis in Medical Education

Continued from page 29

the quality of medical education. But there are still serious questions to be answered about the substance of medical education.

Medical school administrators and teachers must answer such questions as: Can the period required for medical education be shortened without lowering standards? Is the two-year medical school of basic sciences a sound approach? Is the attrition rate too high and, if so, why? Should there be more or less liberal arts in medical education? More or less flexibility? More or less emphasis on basic science? On clinical science? Should we have two kinds of medical school—one to produce practicing physicians and the other to produce medical scientists and teachers?

It is in this realm of curriculum—the very heart of education—that medical schools must do some soul searching. That this penetrating self-evaluation has already begun is acknowledged by the Bayne-Jones Report which notes "... the extraordinary degree of self-examination and experimental activities in teaching now being carried on in most of the best medical schools in the country."

Stanford, Wisconsin, Johns Hopkins, Northwestern, Western Reserve, and other medical schools are now involved in exciting new curriculum changes. There is sharp disagreement among the medical people over the soundness of some of these programs, but all agree that medical education can only benefit from continuing and imaginative re-evaluation of curriculum.

NEXT MONTH

As Part II of its report on medical education, The Johns Hopkins Magazine will discuss in its November issue the bold and significant experiments in medical curriculum that are being conducted in some of the nation's medical schools.

ANNUAL

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The Economic Development of Libya, a report of a mission organized by the International Bank for Reconstruction and Development (October, $7.50).

ROBERT W. FOGEL, G. '57–'60 (political economy): *The Union Pacific Railroad* (October, $3.50).

WILLIAM D. MCELROY, professor of biology and director of the McCollum Pratt Institute, and BENTLEY GLASS, professor of biology: *Light and Life* (December, $14.50).

DRAGOSLAV AVRAMOVIC and RAVI GULHATI: *Debt Servicing Problems of Low Income Countries 1956–1958* (published, $2.50).

BERNARD B. WATSON, staff member (ORO), editor: *Delayed Effects of Whole Body Radiation* (published, $4.50).

THE ALUMNI

W. STUART SYMINGTON, arts '18–'19, has been awarded the honorary degree of doctor of laws by the University of Massachusetts.

GEORGE S. STEVENSON, M.D. '19, house staff '19–'20 (psychiatry), has retired as national and international consultant for the National Association for Mental Health.

E. JEFFERSON BROWDER, M.D. '20, has been named professor emeritus of neurosurgery by the State University of New York.

GEORGE M. LYON, M.D. '20, house staff '20–'21 (pediatrics), has been awarded the exceptional service award from the Veterans Administration for his work in atomic medicine.

WILLIAM S. MCCANN, fac. '21–'24 (medicine), has received the annual Gold Medal from the University of Rochester Medical Alumni Association.

IRVINE MCQUARRIE, M.D. '21, has been awarded the honorary degree of doctor of science from Northwestern University.

WILLIAM W. BELFORD, M.D. '22, has become president of the American Academy of Pediatrics.

CHESTER S. KEEFER, M.D. '22, fac. '23–'26, house staff '22–'26 (medicine), has been appointed director of the newly-created Boston University-Massachusetts Memorial Hospitals Medical Center.

HORACE M. POWELL, SC.D. '23 (hygiene), fac. '23–'25 (immunology), has been appointed research professor of pediatrics at Indiana University.

HENRY V. P. WILSON, JR., M.D. '23, has been elected a trustee of the University of Delaware.

JULIUS WILSON, M.D. '23, has been named director of medical education for the National Tuberculosis Association.

SAMUEL A. SMALL, M.A. '24, PH.D. '25 (English), has become professor emeritus of English at West Virginia Wesleyan College.

HERBERT B. BROOKS, PH.D. '26 (electrical engineering), has been awarded the Morris E. Leeds Award by the American Institute of Electrical Engineers for his contributions to the field of electrical measurements.

DR. OPIE HONORED

Almost twenty years ago, EUGENE L. OPIE, B.A. '93, M.D. '97, LL.D. '47 (hon.), fac. '98–'04 (pathology), retired as professor of pathology at Cornell University, and since that time has accomplished more during his retirement than most people do in a lifetime. As a pathologist at The Rockefeller Institute he is at present engaged in cancer research. He is best known, however, for his discovery of the cause of diabetes and for his pioneer findings in fundamental aspects of inflammation and necrosis and cirrhosis of liver cells. Dr. Opie is also credited with having contributed most of the existing knowledge of tuberculosis (except for effects of chemicals upon the disease). For his contributions to pathology and medicine, the American Association of Pathologists and Bacteriologists awarded Dr. Opie their gold-headed cane last spring, making him the ninth recipient of the coveted award in the 41-year history of the association.

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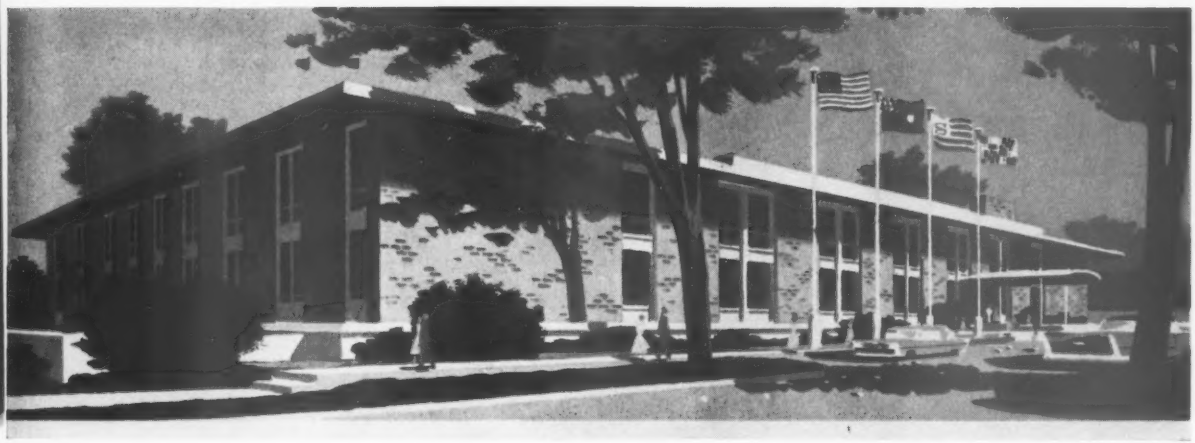

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